

2276  
literature

E09724



TEA



# PITMAN'S COMMON COMMODITIES AND INDUSTRIES SERIES

Each book in crown 8vo, illustrated, 3/- net

- Acids, Alkalis, and Salts.** By G H J ADLAM  
**Alcohol.** By C SIMMONDS  
**Aluminium.** By G MORTIMER  
**Anthracite.** By A L SUMMERS  
**Asbestos.** By A L SUMMERS  
**Bookbinding Craft and Industry, The.** By T HARRISON  
**Books: From the MS. to the Book-seller.** By J L YOUNG  
**Boot and Shoe Industry, The.** By J S HARDING  
**Bread and Bread Baking.** By J STEWART  
**Brushmaking, The.** By W KIDDIER  
**Butter and Cheese.** By C W W TISDALE and J JONES  
**Button Industry, The.** By W U JONES  
**Carpets.** By S BRINTON  
**Clays.** By B SEARLE  
**Clocks and Watches.** By G L OVERTON  
**Clothing Industry, The.** By B W POOLE  
**Cloths and the Cloth Trade.** By J A HUNTER  
**Coal.** By H WILSON  
**Coal Tar.** By A R WARNES  
**Coffee.** By B B KEABLE  
**Cold Storage and Ice-making.** By B H SPRINGETT  
**Concrete and Reinforced Concrete.** By W N TWELVETREES  
**Copper.** By H K PICARD  
**Cordage and Cordage Hemp and Fibres.** By T WOODHOUSE and P KILGOUR  
**Corn Trade, The British.** By A BARKER  
**Cotton.** By R J PEAKE  
**Cotton Spinning.** By A S WADE  
**Cycle Industry, The.** By W GREW  
**Drugs in Commerce.** By J HUMPHREY  
**Dyes.** By A J HALL  
**Electric Lamp Industry, The.** By G A PERCIVAL  
**Electricity.** By R E NEALE  
**Engraving.** By T W LASCELLES  
**Explosives, Modern.** By S I LEVY  
**Fertilizers.** By H CAVE  
**Film Industry, The.** By D BOLGHEY  
**Fishing Industry.** By W E GIBBS  
**Furniture.** By A E BINSTED  
**Furs and the Fur Trade.** By J C SACHS  
**Gas and Gas Making.** By W H Y WEBBER  
**Glass and Glass Making.** By P MARSON  
**Gloves and the Glove Trade.** By B E ELLIS  
**Gold.** By B WHITE  
**Gums and Resins.** By E J PARRY  
**Incandescent Lighting.** By S I LEVY  
**Ink.** By C A MITCHELL  
**Internal Combustion Engines.** By J OKILL  
**Iron and Steel.** By C HOOD  
**Ironfoundry.** By B WHITELEY  
**Jute Industry, The.** By T WOODHOUSE and P KILGOUR  
**Knitted Fabrics.** By J CHAMBERLAIN and J H QUILTER  
**Lead.** By J A SMYTHE  
**Leather.** By K J ADCOCK  
**Linen.** By S MOORE  
**Locks and Lockmaking.** By F J BUTTER  
**Match Industry, The.** By W DIXON  
**Meat Industry, The.** By W WOOD  
**Motor Industry, The.** By H WYATT  
**Nickel.** By B H WHITE  
**Oil Power.** By S H NORTH  
**Oils.** By C A MITCHELL  
**Paints and Varnishes.** By A S JENNINGS  
**Paper.** By H A MADDOX  
**Patent Fuels.** By J A GREENE and M PERKIN  
**Perfumery.** By E J PARRY  
**Photography.** By W GAMBLE  
**Piano Player, The.** By D M WILSON  
**Platinum Metals.** By E A SMITH  
**Pottery.** By C J NOKE and H J PLANT  
**Rice.** By C E DOUGLAS  
**Rubber.** By H P and W H STEVENS  
**Salt.** By A F CALVERT  
**Shipbuilding and the Shipbuilding Industry.** By J MITCHELL  
**Silk.** By L HOOPER  
**Silver.** By B WHITE  
**Soap.** By W H SIMMONS  
**Sponges.** By E J J CRESSWELL  
**Starch and Starch Products.** By H A AUDEN  
**Stones and Quarries.** By J A HOWE  
**Straw Hats.** By H INWARDS  
**Sugar.** By the late G MARTINEAU  
 Revised by F C EASTICK  
**Sulphur and Allied Products.** By H A AUDEN  
**Talking Machines.** By O MITCHELL  
**Tea.** By A IBBETSON  
**Telegraphy, Telephony, and Wireless.** By J POOLE  
**Textile Bleaching.** By A B STEVEN  
**Timber.** By W BULLOCK  
**Tin and the Tin Industry.** By A H MUNDEY  
**Tobacco.** By A E TANNER  
**Velvet and the Corduroy Industry.** By J H COOKE  
**Wall Paper.** By G W WARD  
**Weaving.** By W P CRANKSHAW  
**Wheat.** By A MILLER  
**Wine and the Wine Trade.** By A SIMON  
**Wool.** By J A HUNTER  
**Worsted Industry, The.** By J DUMVILLE and S KERSHAW  
**Zinc.** By T E LONES





TEA PLANT

*Reproduced by permission of Messrs Cooper, Cooper & Co*

PITMAN'S COMMON COMMODITIES  
AND INDUSTRIES

TEA

FROM GROWER TO CONSUMER

BY

A. IBBETSON, O.B.E.



*SECOND EDITION*

LONDON  
SIR ISAAC PITMAN & SONS, LTD.  
PARKER STREET, KINGSWAY, W.C.2  
BATH, MELBOURNE, TORONTO, NEW YORK

**PRINTED IN GREAT BRITAIN  
AT THE PITMAN PRESS, BATH**

# PREFACE

## TO SECOND EDITION

THE success attending the previous edition of this valuable work on Tea has been so encouraging that the author and publishers feel convinced that this edition, revised and brought up to date, will receive a welcome reception and be appreciated by all those who have any dealings with the Tea trade. Production as well as consumption continues to increase, the former in a larger ratio than the latter.

In view of the great importance of tea as a national beverage, reliable information concerning its growth, plucking, drying, marketing, blending, etc., is a vital necessity to all engaged in an important industry. Every effort has been made to check and verify the statements and statistics, but no responsibility can be accepted by the publishers for any error which may have inadvertently crept into the compilation.

A matter of considerable importance since the last edition was issued has been the abolition of the Tea Duty in the United Kingdom. This took effect after the 1929 budget, and was no doubt intended to reduce further the price of tea. Low priced tea, however, should always be avoided—a matter of which the discriminating buyer is fully aware.



# CONTENTS

CHAP.		PAGE
	PREFACE TO SECOND EDITION . . . . .	V
I.	DESCRIPTION OF THE TEA PLANT . . . . .	1
II.	LARGE CONSUMERS . . . . .	7
	DISPARAGEMENT OF CHINA TEA REFUTED . . . . .	12
	THE TANNIN DIFFICULTY . . . . .	12
	WHEN MILK CAN BE DISPENSED WITH . . . . .	13
III.	CHEMICAL ANALYSIS . . . . .	17
IV.	VARIOUS METHODS OF CULTIVATION AND MANUFACTURE . . . . .	22
	CHINESE METHODS . . . . .	22
	TEA IN JAPAN . . . . .	31
	TEA IN CEYLON . . . . .	35
V.	TEA IN INDIA AND OTHER COUNTRIES . . . . .	40
	TEA IN AFRICA . . . . .	46
	TEA IN THE CAUCASUS . . . . .	47
	OTHER TEA-GROWING COUNTRIES . . . . .	49
VI.	MODERN METHODS OF CULTIVATION AND MANUFACTURE . . . . .	51
	BRICK TEA . . . . .	56
	OTHER " TEAS " . . . . .	57
VII.	TAXATION OF TEA . . . . .	63
VIII.	PUBLIC SALES, SAMPLING AND BUYING . . . . .	66
IX.	DISCRIMINATING TASTING . . . . .	78
X.	BLENDING, PACKING, AND STORING . . . . .	95
XI.	HOW TO CREATE INTEREST IN FINER TEA . . . . .	103
XII.	FINE TEA SOLD AT MINCING LANE . . . . .	112
	INDEX . . . . .	115



# ILLUSTRATIONS

	PAGE
TEA PLANT . . . . .	<i>Frontispiece</i>
A WILD TEA TREE . . . . .	3
A KANGANI SUPERINTENDING PLUCKING . . . . .	5
TEA FACTORY, S. INDIA . . . . .	10
COOLIES HOEING . . . . .	14
NATIVE BULLOCK CARTS . . . . .	19
A TEA PLANT NURSERY . . . . .	26
JAPANESE WOMEN PLUCKING TEA . . . . .	30
JAPANESE WOMEN ROASTING TEA . . . . .	34
PICKING THE YOUNG LEAF-BUD . . . . .	37
WEIGHING THE DAY'S PLUCKING . . . . .	42
DEVASTATION BY FLOOD, S. INDIA . . . . .	44
ON A CEYLON TEA ESTATE . . . . .	48
TRANSPLANTING YOUNG PLANTS . . . . .	54
SIROCCO ENDLESS CHAIN PRESSURE DRIER . . . . .	58
CARRYING BRICK TEA, TIBET . . . . .	60
INDIAN TEA FACTORY . . . . .	68
LINE WATCHMAN ON A PLANTATION . . . . .	71
WEIGHING THE GREEN LEAF . . . . .	76
WITHERING TEA . . . . .	80
SIROCCO OVERHEAD CRANK BEARING TEA ROLLER . . . . .	82
SIROCCO ENCLOSED TYPE SINGLE TEA PACKER . . . . .	83
SORTING TEA . . . . .	86
SORTING TEA . . . . .	90
AN AERIAL ROPEWAY . . . . .	93
WEIGHING TEA . . . . .	98
PACKING TEA . . . . .	100
DESPATCHING . . . . .	106
COOLIE HUTS, CEYLON . . . . .	108
CHART . . . . .	114
MAP SHOWING TEA-PRODUCING COUNTRIES . . . . .	<i>end of book</i>

# TEA

## CHAPTER I

### DESCRIPTION OF THE TEA PLANT

TEA, as everyone knows, is prepared from the young leaves of the tea plant, *Camellia Thea* (*Thea sinensis*), a shrub belonging to the natural order Theaceae, and extensively cultivated in China, India, and Ceylon, and, to a less extent, in certain other countries. Under the name of *Thea sinensis*, the Swedish botanist, Linnæus, originally described tea as a single species, but later it became known that two distinct plants were cultivated in China, which he named *T. viridis* and *T. Bohea*. These two species were long thought to be the origin of green and black teas respectively. No strictly wild plants have been found in China, but an indigenous tea-tree, *Thea assamica* (or, as it is now called, *Camellia Thea*), occurs in Assam, and is generally regarded by botanists as the parent species of all cultivated forms.

The tea plant is a bushy shrub which, when left to its natural habit of growth and not subjected to the vigorous prunings necessary for its successful cultivation, attains the height of a small tree. The leaves vary considerably in size and shape, according to the variety, but are leathery, alternate, and generally elliptical or lanceolate, with a toothed margin. Oil glands occur in the substance of the leaf and contain an essential oil to which the flavour of tea is largely due. The under surface of the young leaves is thickly covered with fine hairs which

entirely disappear with advancing age. The beautiful white or rose-coloured, slightly fragrant, flowers occur either singly or in clusters in the axils of the leaves ; they are succeeded by more or less globular fruits consisting of capsules composed of three compartments, usually with only one seed in each compartment.

The question as to the original home of the tea plant is by no means settled, the point at issue being whether, after all, the true home of the plant is in the country naturally associated with it, viz., China, or in the neighbouring Indian province of Assam. The evidence in support of the latter contention is largely based upon the fact that the tea plant attains extraordinary luxuriance in Assam, greater, it is said, than that attained in any part of the Celestial Kingdom, and, arguing that in its natural home a plant reaches its greatest development, supporters of this view maintain that it is in Assam and not in China that we are to look for the home of tea. It by no means follows, however, that the reasoning of this argument is sound, for it has been repeatedly noticed that plants introduced into new countries where conditions seemed favourable for their growth have flourished so well that their luxuriance rivalled that of the plants growing in the land admitted to be their home. Support for the opposite view is sought in a Japanese legend which ascribes to China the honour of being the home of the tea plant ; but, unfortunately, there is evidence for supposing that the Chinese never heard of this legend except from foreign sources, although the events related occurred in their own country. There are, however, certain references to the plant in the writings of a Celestial author who lived about 2,700 B.C., and a Chinese commentator of this ancient author, writing in the fourth century B.C., calls attention to the mention of the plant, and adds



**A WILD TEA TREE**

that a beverage could be obtained from the leaves by adding hot water. It appears that the plant was used entirely as a medicine until A.D. 550, when it became a popular beverage.

De Candolle, however, in summing up the evidence on both sides, attaches considerable weight to the fact that apparently wild specimens of tea have been found by travellers in Upper Assam and in the province of Cochar, and adds that "the tea plant must be wild in the mountainous region which separates the plains of India from those of China"; he, however, regards the evidence as tending to prove that the *use* of the leaves was introduced into India from the latter country.

Much more certain information naturally exists as to the date of the introduction of the product into Europe. There is a story which states that a package of a commodity hitherto unknown was received by an old couple in England during the reign of Queen Elizabeth, and that, instead of infusing the leaves and using the extract, they threw away the coloured liquid and ate the leaves after spreading them upon bread. Whatever may be said as to the probability of this story, it is definitely known that tea was introduced into Europe from China late in the sixteenth century, and that in 1657 a regular tea-house was opened in Exchange Alley, London. From this date tea began to be a regular beverage in England. It is mentioned by Pepys in his Diary; under the date 28th September, 1660, we read: "I did send for a cup of tea (a China drink), of which I had never drunk before," and, "Home, and there find my wife making of tea, a drink which Mr. Pelling the Pothicary tells her is good for her cold and defluxions." It was at about the time of its earliest introduction into England that tea first became known in Russia,



A KANGANI SUPERINTENDING PLUCKING

an embassy to the Court of Peking bringing back some green tea to the ancient capital, Moscow. In 1664 the famous English East India Company made a present of two pounds of tea to the queen of Charles II, Catherine of Braganza, and the product was still regarded as a rare delicacy. Fourteen years later the Company imported from China nearly 5,000 lbs , and towards the end of the century tea had ceased to be a rarity.

## CHAPTER II

### LARGE CONSUMERS

WHEN we turn our attention to the countries and peoples who are large consumers, we find that heading the list as the greatest tea importers of the world are the people of the United Kingdom. For the year 1929, imports into the United Kingdom on which duty was paid exceeded 560,000,000 lbs., and the price obtained for this quantity, based on average prices realized at London auction sales, amounted to £40,000,000. This compares with 358,000,000 lbs. costing below £14,000,000 obtaining prior to 1913.

In 1913 the average prices realized for Northern Indian tea, which the United Kingdom principally consumes, was 8½d. per lb., for 1923 it was 1s. 6¾d. For 1929 it has been as low as 1s. 0½d., and up to 1s. 6¼d. per lb.

Before the War Russia (Europe) was the next largest consumer, and, taking the average imports over 1909–1913, consumed 144,000,000 lbs. annually. Since the War imports have been negligible, but indications point to a resumption of demand, as for the year 1923, from the little statistical details available, imports exceeded 3,000,000 lbs., whilst for the current year to date the United Kingdom have exported over this quantity, and it is known that considerable quantities are going direct through Holland, China, Northern India, and Persian Gulf ports. For 1928 the Russian consumption exceeded 40,000,000 lbs., but this is only .4 per lb. per head of the population against pre-war consumption of 1½ lbs. per head.



We are now followed in consumption by North and South America, which together in 1929 absorbed, say, 141,500,000 lbs., U.S.A. taking 89,500,000 lbs., and Canada 39,500,000 lbs., Australia and New Zealand with 60,000,000 lbs., Netherlands 57,000,000 lbs. (largely re-exported), whilst all other countries annually record an increasing consumption.

As an indication of the large increase in production as compared with 47 years ago, the undermentioned table is of interest—

	1882 lbs.	1912 lbs.	1929 lbs.
From—			
India and Ceylon .	58,991,000	473,751,800	621,000,000
China . . . . .	268,953,000	197,560,000	113,000,000
Japan and Formosa	35,487,000	63,700,000	42,000,000 <sup>1</sup>
Java and Sumatra .	6,000,000	66,600,000	160,000,000
Total lbs.	369,431,000	801,611,800	936,000,000

The world's consumption for 1928, from figures available, exceeded 820,000,000 lbs.

A factor of interest is that the United Kingdom carries the stock of the world, where the finance of the trade and marketing of the produce are carried on. It is apparent, therefore, that the barometer of "stocks" is closely followed, and close attention is also paid to "crop" prospects and quality with a view to gauging the world's requirements. Such details form the bases of large operations in "forward crop contracts," some gardens selling their produce for years ahead to the principal distributors.

These factors may help to explain the sharp movements recently recorded in the price of the commodity.

Although one of the most striking facts in connection with the tea export trade is the practical loss to China

<sup>1</sup> Japan, 6 months.

of some of the most important of the world's markets, it must not be supposed that the tea industry in China is ruined. As a matter of fact the area under cultivation has not diminished to any appreciable extent during the past forty years ; for the Chinese grower has a vast local market, and immense quantities of inferior tea are converted into the " brick tea " for Tibet and Russia. Moreover, at the present time, there are unmistakable signs that the Chinese intend to make a bold bid for the recovery of some of the ground they have lost ; for the more enlightened among them have realised that the trade was lost owing to inferior, and to the Western mind sometimes repulsive, methods of manufacture, and also to the fact that, generally speaking, hand labour must at last give way before machinery. That the Chinese are serious in their desire to regain their trade is evidenced by the fact that in 1905 the Viceroy of Nanking appointed a Chinese Tea Commission, headed by an Englishman, Mr. Lyall, to enquire into the methods and conditions of tea cultivation and manufacture in India and Ceylon. As a whole the Chinese soil is said to be less productive with regard to tea than that of our Eastern Empire, and the climate of the tea districts is colder and less forcing ; further, the yield per acre cannot compare with that obtained by the European planters. Nevertheless, the ruling classes in China have become alarmed at the great falling off in revenue due to the diminution of the export trade, for there are heavy Chinese transit and export duties on the product, and it is their intention to see what improved methods of cultivation and manufacture can do to restore this trade. Whether the Chinese peasant can be induced to depart from the methods and customs which have been handed down to him for countless generations is a matter open to question, but the attempt on the part



*Mr T C Owen*

TEA FACTORY, SOUTH INDIA

*By the courtesy of*

of the authorities is significant, and the situation may be very accurately summed up in the words of an editorial of a Ceylon planting paper: "... The way in which it (*i.e.*, the Chinese trade) has steadily gone back during the last fifty years is not at all conclusive proof that there can be no important recovery under changed conditions and methods. In other words, the swing of the pendulum may be witnessed in this department of agriculture and commerce as well as in any other, seeing that the (Chinese) tea gardens have suffered no radical injury."

At the present time there is a slightly increasing demand for China tea, and although the consumption in the United Kingdom is small compared with other growths, yet there are signs that these delicate China kinds will again come into favour, especially amongst people of refined taste. The following abstract from *The Lancet* of August 1st, 1908, may be taken as the last word on rival teas, although how far the consumer will be persuaded is another matter. Anyone who has never drunk really fine pure China tea has missed a great deal.

"A controversy which has long been settled in the minds of scientific men has been revived by trade partisans. The persons, on the one hand, whose business it is to sell China tea affirm that Indian tea was long ago tabooed by medical men because, unless it is prepared for use under very careful directions, it contains an excessive amount of astringent substances, known to chemists under the generic name of tannin. On the other hand, the parties interested in the sale of Indian and Ceylon teas declare that China tea is objectionable because the leaf is prepared under unwholesome conditions, that it sustains in fact contamination owing to its manipulation by hand,

whereas Indian and Ceylon teas are immaculate in this respect, because nothing is concerned in their manufacture and production for the market but machinery. To this view many tea connoisseurs reply that the æsthetic qualities of the tea leaf are injured considerably by the mechanical means adopted."

#### DISPARAGEMENT OF CHINA TEA REFUTED

"The disparaging statements in regard to China tea, which are based on the fact that it is prepared by hand, may, we think, be disregarded, for it is hardly conceivable that any serious contamination can arise, and if it did any disease organisms that survived the process would be destroyed in the tea-pot. It is well known that, apart from boiling, an infusion of tea is antagonistic to the life and development of micro-organisms, and this appears to be specially the case in regard to the typhoid organism. The objection to the manipulation of tea by hand instead of by machinery has about the same logic on its side as has the objection to the grape being trodden under foot before the wine is produced. No one gives much thought to this fact when drinking a favourite claret. The fact is that the tendency of a fermentative process is to exclude adventitious impurities, and fermentation is essential to the production of both tea and wine. The argument in favour of China tea on the ground that in general it is far less astringent than is Indian tea rests on a scientific basis, and there we are content to leave the controversy."

#### THE TANNIN DIFFICULTY

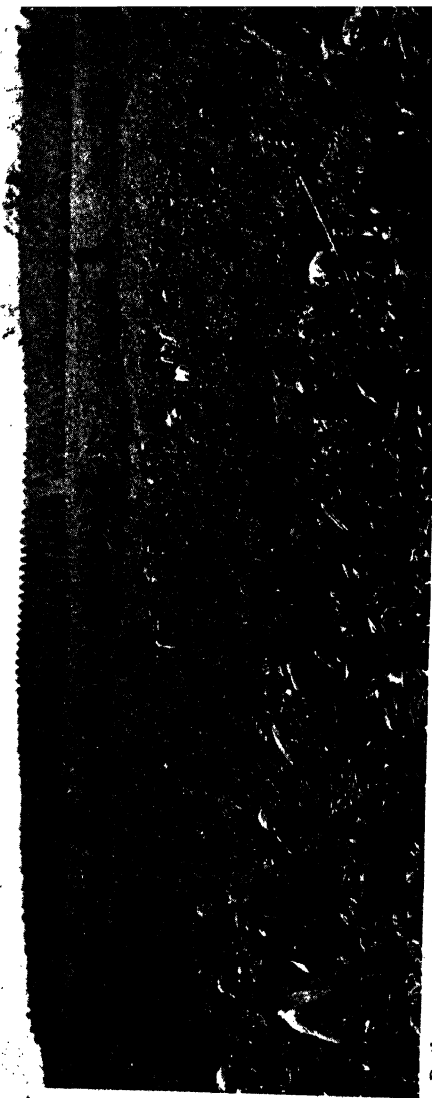
"It is idle and impossible for the advocates of Indian tea to deny that their favourite commodity contains and yields, when infused, a much larger

amount of tannin than for the most part do China teas. The latter, in fact, are altogether more delicate in character, and certainly more suited to the requirements of persons with delicate digestive apparatus. If a dyspeptic is permitted to drink tea at all, that tea should be China tea ; because, as a rule, it is much less astringent, and therefore less likely to derange a delicate digestive system. Analysis has proved this again and again, and it is a confidence which has no reason behind it which asserts anything to the contrary."

#### WHEN MILK CAN BE DISPENSED WITH

" There can be little doubt that if it were not for the habit of adding milk to tea, which in the circumstances is a perfectly correct physiological though perhaps not æsthetic proceeding, the infusion of a powerful Indian tea would produce infinitely more harm than it does. On the other hand, China tea, owing to its delicacy, is frequently consumed without milk, some persons choosing the Eastern method by adding to it a slice of lemon. There is, after all, very little to be said against the strongest teas, so long as they are prepared under the simple precaution which excludes the greater part of the astringent substances from passing into the infusion—namely, by allowing the tea to "brew" for only a few minutes. That precaution, however, is not so necessary when China tea is chosen."

From the above extract it will be seen that China tea should be pushed with renewed vigour, and not neglected or relegated to a back shelf as a commodity for which there is no demand. There are people with a weak digestion, who find that strong Indian teas do not agree with them, the result being that the beverage is



*By the courtesy of*

*The Indian Tea Association*

COOLIES HOEING. SEED GARDENS IN BACKGROUND

given up entirely. In such cases a customer may be reclaimed by recommending pure China tea. As in other growths the finest is the best ; but a very refreshing tea can be obtained to retail at 2/6 or 3/- which, if prepared with due care, will prove invigorating and acceptable. Those who are not accustomed to drink China tea will find the flavour somewhat strange at first, but after a short time the delicate aroma will be appreciated, and a return to the stronger growths unlikely. Some think that a pleasant drink is prepared from a blend of China tea and Ceylon. If such a mixture is decided upon, the proportion of Ceylon will be about one to three of China tea. The Ceylon to select for this purpose should be absolutely pure with the true Ceylon flavour, and if the leaf is large, it should be milled to a size equal to that of the China.

When we examine the figures showing the amount of tea annually consumed per head of the population we find that the United Kingdom heads the list with a consumption of 9·1 lbs. per person for 1928 as against 6·6 lbs. for 1913, Australia 8·3 lbs., New Zealand 7·8 lbs., Canada 4·7 lbs., Holland 4·1 lbs., as compared with 7·5 lbs., 6·5 lbs., 4·4 lbs. and 2·1 lbs. respectively for 1913.

The U.S.A. has for the past few years shown an average yearly increase in consumption of 10,000,000 lbs. and is now equal to 1 lb. per head of her population of over 100,000,000. The Indian Cess Committee in 1923 inaugurated a large advertising scheme for popularising Indian tea in the States, and indications point to a large expansion in demand from this country.

The enormous consumption in the United Kingdom is very striking. In 1840 it equalled 1·22 lbs. per head and each succeeding year has seen an increase to the present high record. No other beverage has shown such a marked expansion in consumption. Russia,



who in pre-war times took such a large quantity, was commonly regarded as a great tea-drinking people, but this is a popular error for only the comparatively wealthy could afford to buy tea, for which the average price was then 4s. per lb.—now it is impossible to state any reliable figure.

The rise in popularity of tea in England was comparatively slow up to the beginning of the nineteenth century. In 1711 the consumption per head was only 0·03 lb., and in 1780 it had risen to only 0·57 lb. During the first four decades of the next century the average stood at about 1·25 lbs., but after 1840, the period at which tea-planting was rapidly being extended in India, the consumption rose very quickly.

## CHAPTER III

### CHEMICAL ANALYSIS

WITH regard to the chemistry of tea, the most important constituents from the point of view of the quality of the beverage are an essential oil, tannin, and an alkaloid known as theine. The flavour of the tea is largely due to the essential oil, but the remarkable stimulating and refreshing qualities of the beverage are due to the theine, which is also found in coffee, Paraguay tea, or maté, and the kola nut; a closely allied alkaloid is also present in cacao. Experiment has shown that an infusion of the leaf for ten minutes is sufficient to extract all the valuable theine, and a longer period merely results in an accumulation of tannin which in excess, is well known to impede digestion seriously.

The mean of sixteen analyses quoted by König gives the following result—

Water .. .. .	11·49%
Nitrogenous substances ..	21·22
Theine .. .. .	1·35
Ethereal oil .. .. .	·67
Fat, chlorophyll .. ..	3·62
Gum and dextrin .. ..	7·13
Tannin .. .. .	12·36
Other nitrogen free matter ..	16·75
Woody fibre .. .. .	20·30
Ash .. .. .	5·11
	<hr/>
	100·00
	<hr/>

An instructive and interesting research on the various changes which take place in the tea plant through age has been made by O. Kellner. To carry out the experiment, tea leaves from the same plants were collected twice a month from May to November ; a sample from the identical plants was also taken at the end of twelve months, with the following results—

It was found that there was present in the *young* leaves more theine, water and amido-acid, whereas in the *old* leaves there was an increased proportion of ash and tannin, combined with a *decrease* in theine, water, etc.

Adulteration is now happily a thing of the past. Formerly tea was extensively adulterated in England, but in consequence of the gradual reduction in the duty this reprehensible practice has ceased. The debasing foreign mixings resorted to were in many instances imitations of those so ingeniously designed by the clever Chinese themselves, and may be described under four heads—

1. Foreign leaves.
2. " Lie " tea.
3. Mineral substances.
4. Materials used for colouring, painting, or " facing " tea.

" Lie " tea referred to was the descriptive and ingenious designation given by the Chinese to redried, faced, or any adulterated teas. The following extract from Fortune's *Tea Countries*, is interesting, inasmuch as it gives an account of colouring and facing tea—

" The superintendent of the workmen managed the colouring process himself. Having procured a portion of Prussian blue, he threw it into a porcelain bowl, not unlike a chemist's mortar, and crushed it



*By the courtesy of*

*Liptons, Ltd.*

NATIVE BULLOCK CARTS, COLOMBO

into a fine powder. At the same time a quantity of gypsum was burned in the charcoal fires which were then roasting the teas. The gypsum now readily crumbled, and was reduced to powder in the mortar. The two substances having been thus prepared were mixed together in the proportion of four parts of gypsum to three parts of Prussian blue, and formed a light blue powder which was then ready for use. This colouring matter was applied to the tea during the last process of roasting. About five minutes before the tea was removed from the pans, the time being regulated by the burning of a joss stick, the superintendent took a small porcelain spoon, and with it he scattered a portion of the colouring matter over the leaves in each pan. The workmen then turned the leaves rapidly round with both hands, in order that the colour might be equally diffused. During this part of the operation the hands of the workmen were quite blue. If only green tea drinkers could be present to witness the operation ! No wonder the Chinese consider the natives of the West to be a race of barbarians."

It is well known that tea comes under the scope of the Food and Drugs Act, but also was the subject of special provisions against adulteration contained in a series of Statutes of the reigns of George I to George III. It is recorded that in 1843 an authority of the Inland Revenue stated that there existed several factories for the purpose of re-drying exhausted tea leaves. They were collected from hotels and coffee houses, immersed in a gummy solution, dried and mixed with other leaves, such as horse-chestnut, and coloured with black lead or indigo (tea was then about 20s. per lb.). To Dr. Hassall is due the credit of bringing home to the

public and the Government the prevalence of this crime and thus compel legislation.

Now every consignment of tea is examined by the Customs authorities on arrival in any port in England, and it is of great interest, as showing how particular producers are to send only tea fit for consumption, to record that for the year ending March, 1924, only 42,068 samples were examined, of which but 1,024 were reported against—394 on account of presence of foreign substances and 630 as unfit for consumption. The rejected samples represented 4,853 packages = 485,300 lbs. as against an import total of over 457,000,000 lbs.

The samples reported against consisted mainly of dusts and common Chinese descriptions.

## CHAPTER IV

### VARIOUS METHODS OF CULTIVATION AND MANUFACTURE

WE will now turn our attention to a consideration of the principal facts in connection with tea cultivation in different parts of the world. First of all we will give an account of the

#### CHINESE METHODS OF CULTIVATION AND MANUFACTURE

As is the case in nearly all branches of Chinese agriculture, the tea farms are mostly small, each consisting of from four to five acres. Practically every cottager has his own little tea garden, the produce of which supplies the wants of his family, and the surplus brings him in a few dollars with which he procures the other necessities of life.

In the green-tea districts of Chekiang picking commences about the middle of April. The first crop of leaves consists of the leaf-buds just as they are about to open, and the tea manufactured from the first pickings is of extremely delicate flavour, being held in such high esteem by the natives as to be used chiefly for making presents to friends. The plucking of the young buds is liable to cause considerable injury to the plants, but, under the influence of the copious showers which generally fall about this time of the year, the plants, if young and vigorous, rapidly put on fresh shoots and leaves. Two or three weeks later the shrubs are ready for the second plucking, which is the most important of the season, and as soon as the plants have again recovered,

the third and last gathering commences, producing a very inferior variety of tea

The methods and apparatus employed by the Chinese in the manufacture of their teas are extremely simple, yet, with the abundance of labour obtainable, they are by no means ineffective. A large proportion of the tea is prepared in the humble cottages of the peasants, and barns, sheds, and outhouses are also frequently used for the same purpose, particularly those belonging to the monasteries and temples. The drying pans and furnaces in these places are of very primitive construction. The shallow, circular pans, made of very thin iron, closely resemble in shape and size the ordinary cooking pans which the Chinese have in general use for the preparation of their rice. They are built, several together, in a brick-work furnace which is so constructed that the sloping sides of the basin are continued upwards for three parts of the circumference, resulting in what is practically a broad, shallow brick and cement basin, the actual bottom of which consists of the thin iron pan. The object of this arrangement is to allow of the easy and thorough mixture of the leaves during the roasting process. Running beneath the whole row of pans is a flue, the fireplace being at one end, and a rough chimney at the other.

After the leaves have been brought in from the plantations, they are placed in a shed or drying-house, which may, indeed, be the cottage itself. The fire is then kindled in the furnace and a quantity of leaves thrown into the heated pans and constantly turned over and kept in motion by men and women stationed in front of the pans. The heat immediately causes the leaves to crack and become quite moist with the sap which is given out under its influence, and in about five minutes the process is complete, the leaves having become quite



soft, pliable, and altogether devoid of their original crispness. The leaves are then taken from the pans and placed upon bamboo tables, around which stand several persons, who take a quantity of the leaves in their hands and carefully roll them on the table in a manner closely resembling the working and kneading of ordinary baker's dough. The object of this process, which lasts about five or six minutes, is to twist the leaves and, at the same time, to express the sap and moisture, which escapes through the interstices of the surface of the table. In the next stage of the process the object is to expel the moisture as gradually and gently as possible, retaining the softness and elasticity of the leaves to the fullest extent. This is effected by taking the rolled leaves, spreading them out thinly and evenly upon a screen made of the strips of ever-useful bamboo, and exposing them to the action of the atmosphere. There can be no fixed time for the completion of this process, which depends entirely upon the state of the weather, but experience has taught the operators to avoid placing the leaves in the direct rays of a powerful sun, which evaporates the moisture too rapidly, leaving the leaves crisp, coarse, and quite unfit for the next stage in the manufacture. The soft and pliant leaves are now again thrown into the drying-pans, and subjected to the action of a slow, steady fire. It is of great importance that the leaves should not be scorched or burned, and it is the custom for one person to attend solely to the fire, while others, standing in front of the pans, mix and agitate the leaves with their hands so that all shall be equally dried. As the temperature increases it becomes impossible to mix the leaves by hand, so small bamboo whisks or brushes are employed, the leaves being thrown up against the sloping sides of the pans and allowed to roll back into the iron portion at the bottom. The

leaves gradually part with their moisture, twist and curl, and after about an hour, are taken from the pans, to constitute the finished product. Tea so prepared is green in colour, but it lacks the vividness of colour which characterises much of the green teas exported to Europe and America, and which, in former days, at any rate, was produced at Canton by dyeing the leaves with gypsum and Prussian blue. It is a significant statement of Chinese travellers that the Chinese themselves never use the artificially coloured teas!

When the tea finally leaves the drying-pans it is picked over and sifted, and finally sorted into different grades previous to packing. If the tea is intended for export, this is a very important process, since the value of a consignment largely depends upon the "evenness" of the leaf, and considerable experience and manual dexterity are necessary to ensure the tea being of the same grade and quality throughout. Once satisfactorily sorted, the tea is put into boxes or baskets and pressed down by men treading it with their feet, which are covered with clean cloth or straw shoes put on for the purpose.

Up to the end of the rolling process, the preparation of black teas proceeds upon lines exactly similar to those described above, but after the rolling, the leaves are subjected to a much more extended drying process in the open air, the period lasting for two or three days. The difference in the colour and character of the teas almost entirely depends upon the differences in the methods of preparation at this stage, and, since the matter is more fully dealt with below in connection with the Ceylon and Indian industry, it will be sufficient to add that the leaves intended to produce black tea, during this extended exposure to the atmosphere, undergo a process of fermentation which does not obtain



A TEA-PLANT NURSERY

in the manufacture of green teas. Great care is taken in the final drying or "firing" of the black teas, an experienced and generally old man being invariably employed to regulate the furnace while the other members of the family keep the leaves constantly agitated in the pans. The finished tea is then sorted and packed as in the case of the green varieties.

The teas, whether green or black, have next to be sold, and at the end of the season, the great tea merchants or their agents visit the tea districts, taking with them large supplies of copper coin with which to pay for the commodity. The merchants generally put up at the local inn, and as soon as they have arrived, the growers bring in their baskets of tea, slung on bamboo poles, to submit them to the inspection of the prospective buyer. If the quality is satisfactory, the bargain is struck, and the tea and money change hands. Should the tea not meet with the approval of the merchant, it is promptly taken away and offered in other quarters until a sale is effected. The teas bought up in a district are then conveyed to the most convenient town, where they are again graded and packed into chests for the foreign markets.

The purest of all teas, which is least touched by the human hand in its manufacture, is the Virgin tea of China. It is prepared exclusively from the very youngest leaves of the shrub and is used principally at Chinese marriages, and so delicate are the leaves that even after prolonged boiling but little tannin is evident. The leaves are tied together with silk thread in tiny bundles, and when the tea is to be brewed a bundle of the leaves is held in a large clear crystal cup of very thin glass by means of a small ivory or silver skewer, and the boiling water poured in. The leaves slowly unfold, and change colour from the dingy greyish-black

condition, quickly reverting to nearly the same refreshing greenness which they possessed when they were plucked. The infusion, as seen through the glass, is of a pale amber colour, resembling that of the finest qualities of cognac ; it is drunk directly from the leaves, the aroma and odour being obtained to perfection.

It was largely owing to the jealousy of the Chinese Government, in preventing the visits of foreigners to the great tea-growing districts, that the mystery surrounding the origin of " black " and " green " teas was not finally cleared up until nearly the middle of last century. Up to that time we find English writers contradicting one another, some asserting that the black and green teas were produced from the same variety of the tea plant, and differences in the finished product being due entirely to differences in the process of manufacture, and others equally convinced that the two kinds of tea were produced from distinct varieties of the tea plant, the " black " teas being prepared from the leaves of the *Thea Bohea* and the " green " teas from *Thea viridis*, both plants being well known in England. During the early part of the nineteenth century, however, the great botanist, Robert Fortune, was travelling in China on behalf of the Horticultural Society, and it was due to the efforts of this observer that the mystery was at last explained. The tea-growing districts visited by Fortune were those of Canton, Fokien, and Chekiang. Up to the time of his investigations upon the matter, Fortune had held to the view of the dual origin of the two varieties of tea, and was gratified to find that, while in Canton black tea was obtained from a plant which he identified as the true *Thea Bohea*, in the green-tea districts of the province of Chekiang he failed to meet with a single plant of this species, and further, all the green-tea plants he was able to examine in Ning-po

country and in the islands of the Chusan Archipelago, proved to be, without exception, *Thea viridis*. Fortune then left for the province of Fokien, fully convinced that he would find the tea hills covered with *Thea Bohea*, since black tea was largely produced in the district, and the species took its name from the Bohee hills in this province. In his book, *Wanderings in China*, Fortune proceeds: "Great was my surprise to find all the tea plants on the tea hills near Foo-chow exactly the same as those in the green-tea districts of the north. Here were then green-tea plantations on black-tea hills, and not a single plant of the *Thea Bohea* to be seen. Moreover, at the time of my visit, the natives were busily employed in the *manufacture of black teas*. Although the specific differences of the tea-plants were well known to me, I was so much surprised, and I may add amused, at this discovery, that I procured a set of specimens for the herbarium, and also dug up a living plant, which I took northward to Chekiang. On comparing it with those which grow on the green-tea hills, no difference whatever was observed. It appears, therefore, that the black and green teas of the northern districts of China (those districts in which the greatest part of the teas for the foreign markets are made) are both produced from the same variety, and that that variety is the *Thea viridis*, or what is commonly called the green-tea plant. On the other hand, those black and green teas which are manufactured in considerable quantities in the vicinity of Canton are obtained from the *Thea Bohea*, or black tea. And, really, when we give the subject our unprejudiced consideration, there seems nothing surprising in this state of things. Moreover, we must bear in mind that our former opinions were formed upon statements made to us by the Chinese at Canton, who will say anything which suits their



JAPANESE WOMEN PLUCKING TEA

purpose, and rarely give themselves any trouble to ascertain whether the information they communicate be true or false." It was thus definitely proved that the differences in the teas reaching this country were not due to specific differences in the tea plants, but were produced as a result of differences in methods of manufacture.

### TEA IN JAPAN

The success which has attended the efforts of Indian and Ceylon planters to oust China teas from some of the most important of the world's markets is one of the most striking facts in the history of the tea trade. Up to the present, however, the British planter has made comparatively little impression upon the volume of the Japanese export trade in tea, and in the United States and Canada the product of Japan holds a position which appears to be very secure, while certain grades have earned a reputation which cannot readily be shaken. Within recent years considerable attention has been paid by British growers to the Japanese tea industry, and several reports have been issued as a result of investigations carried out on the spot. Japanese teas may be divided into four classes: (1) Hikacha or Yenchā, a powdered tea of high quality used only on ceremonial occasions; (2) Green tea, subdivided into Gyokuro ("pearly dew") and Sencha, the latter being inferior to Gyokuro in quality, but constituting the bulk of the tea drunk by the people; (3) Bancha, consisting of the previous year's leaves mixed with withered stalks and chopped twigs; (4) Oolong and Black tea. With regard to the Black teas it is interesting to note that comparatively little is produced in Japan, since for some reason not sufficiently understood, but probably due to imperfect methods, the native leaf does not



undergo the fermentation processes successfully, and poor results generally attend the efforts made to obtain a good black tea. The Oolong varieties have the colour and appearance of black tea but possess the flavour of green tea. Japan proper produces very little Oolong, but large quantities are shipped from Formosa.

The teas most interesting to the British planter, however, are the Gyokuro and Sencha green teas, for these are the grades exported to the American continent, where green teas have a great hold upon the popular taste. They further form the bulk of tea consumed by the Japanese themselves.

The Japanese tea-planter prefers the lower slopes of the hills for setting out his bushes, although, providing that the drainage is satisfactory, successful plantations can be laid out on the level plains. The famous Uji tea gardens are mostly on the plains. It frequently happens that the tea is interplanted with other crops, mulberries and plums being often grown between the tea bushes, while in one district pears are grown on trellises placed above the tea. The bushes are usually allowed to reach a height of about three feet, but in the Uji gardens they frequently attain to six feet. A peculiarity of the Uji district is that a large part of the tea is cultivated under artificial shade, the effect being to produce a better quality of leaf of a darker green colour. Bamboo poles are set up at intervals and arranged to support horizontal mats also made of bamboo. After the crop has been plucked the matting and poles are taken down. The shade-grown tea is highly valued by the Japanese, and is grown exclusively for home consumption. Picking usually begins at the end of the third or fourth year and the best leaf is obtained from the eighth to the fifteenth year. The ordinary life of the bush is about twenty-five years.

There are, as a rule, two crops in the year, one in May and the second in the middle of June, after the rains ; a third crop is sometimes obtained, but the quality of the leaf is very poor. The bushes are pruned after the first crop, and again during the winter.

In the manufacture of the teas it is interesting to note that in the case of the better class green teas, and a considerable proportion of Sencha, no machinery is used, the whole process being carried out by hand, the popular belief being that it is impossible to procure with machinery the delicate aroma produced by the old-fashioned hand methods. For the production of teas destined for the export trade, however, machinery has entirely supplanted hand labour.

The preparation of the leaves begins as soon as possible after picking, and in the case of Sencha, which forms the bulk of the tea consumed in Japan, the first process is said to be that of steaming. The steam is allowed to act on the leaves for about four minutes, when they are shaken by hand, and spread out on mats to dry. The important process of firing now follows. The workman first smears the surface of the paper lining of the firing tray with rice paste, which, when dry, affords a hard polished surface. A small quantity of the steamed leaf is then poured into the tray, which the workman turns over repeatedly until the edges of the leaves begin to curl as a result of the heat and mechanical friction. The workman then works the leaf into balls, which he breaks and again works up, extracting, meanwhile, the stalks, dried leaf, and other impurities. As the firing progresses, the fresh green colour of the leaves gradually changes to an olive brown, and the fragrant odour of the tea becomes perceptible. The mass gradually shrinks in size as the moisture evaporates, and when finally pronounced to be dry—the whole operation of



JAPANESE WOMEN ROASTING TEA

firing lasts about three hours—it is seen that each leaf is separately twisted and rolled. The tea is then spread out on paper-lined trays similar to those used for firing, and left until the leaves become quite brittle. If destined for home consumption the leaves are sifted with bamboo hand sieves of three or four degrees of fineness, and any impurities remaining are removed by hand ; if for export, the sifting is not carried out, but the tea is immediately packed in cases made of thick cartridge paper and despatched to the wholesale merchant.

The methods of cultivation and processes of manufacture adopted in the case of Gyokuro and Hikacha teas—the finest qualities—are said to differ in several respects from those described above for the bulk of the tea raised in Japan ; but the actual details are not perfectly known.

#### TEA IN CEYLON

The story of the rise of the tea industry in Ceylon is one of the most interesting in the history of planting. Up to the middle of the last century, coffee had been the most important of the European cultivations, but in the sixties a terrible fungal disease commenced its ravages in the coffee plantations of the island, and after a comparatively few years it was evident that the industry was doomed. The enormous losses, widespread consternation, and distress occasioned by this calamity are known to all those interested in coffee, and need be no more than mentioned here ; but in spite of the blow which had been dealt them, the planters with commendable pluck and energy turned all their attention to the discovery of other crops suitable to the climate and conditions of Ceylon, with which their broken fortunes might be restored. Attention was given to cinchona, cardamoms, cacao, and other crops

without any great measure of success ; but it was not until they seriously turned their attention to tea that the panacea was discovered. It was found that the warm, damp climate of many parts of the island was pre-eminently suited to the cultivation of the new crop ; moreover the hardiness of the tea-plant when compared with coffee soon raised the hopes of the planters and encouraged them in their new efforts.

A very interesting factor in influencing production was the serious drop in the value of silver. At first sight it is difficult to understand why this should be so, but when we remember that the currency in India and Ceylon is silver, while in Great Britain, where the tea is mostly sold, there is a gold currency, it will throw some light on the subject. The following lucid explanation is taken from a paper read by the late Mr. A. G. Stanton before the Society of Arts—

“ The tea was mostly sold in Great Britain, where the currency is gold. With the gold received as proceeds of the tea sold in the United Kingdom, silver rupees were bought to pay for the labour, etc., necessary for the upkeep of the estates. As the price of silver fell, more rupees could be purchased for the same quantity of gold ; thus when the rupee was worth two shillings, only ten could be purchased for £1, but when it fell to nearly one shilling, about twenty could be purchased for £1. Consequently, as the rupee fell in value, cultivation became cheaper every year. This went on until the beginning of 1895, when the value of the rupee was 1s. 0½d., but owing to this decline in the price of silver, the Indian mints were closed in 1893 in order to fix the value of the rupee at about 1s. 4d. This had the effect of raising the price of the rupee in India and Ceylon, and thus



*By the courtesy of*

*Leptons Ltd.*

PICKING THE YOUNG LEAF BUD

materially increased the cost of production : but the mischief as regards tea had already been done. When the exchange dropped, large tracts of land were planted up in the belief that the value of the rupee would be regulated by its intrinsic value, and the rise to over 1s. 4d. was a severe blow to tea production, owing to the greatly increased expense in cultivation."

It has been frequently stated that tea was found to be already existing in Ceylon by the Dutch, who occupied the island before the advent of the British ; but this statement lacks any really satisfactory confirmation. A very small amount of tea was originally planted out in Ceylon as early as 1839 ; but the first regular plantation was not opened out until 1867, when Messrs. Keir, Dundas & Co. started to raise tea at Yoolcondura. The area was about ten acres, and for some few years the industry made no great strides. In 1877 some 2,720 acres were under tea. Ten years later this had increased to 170,000 acres. In 1897 the area had grown to 350,000 acres, and in 1928 the official returns showed an area of 440,000 acres.

The area recorded for 1905 included a certain acreage which had been interplanted with rubber, and in Ferguson's Ceylon Handbook it is estimated that the actual area under tea was about 380,000 acres. One of the most noticeable facts borne out by a study of Ceylon tea statistics is that whereas during the period up to 1890 the acreage had increased by leaps and bounds the area of cultivation was less in 1923 than it was during 1913, when the area totalled 409,000 acres.

The average size of an estate in Ceylon is about 300 acres. As in so many industries in all parts of the world, there has been a tendency of late years to group

several estates under one working staff to effect economies in working and management expenses, but, nevertheless, by far the greatest proportion of estates are small, and in the hands of the European planters resident on the estates themselves. In a very large number of cases, perhaps in the majority, the estates are owned by companies, and the planters are servants of the company, and not the actual owners of the estates, as was more often the case in former years.

The enormous labour supply necessary for the Ceylon plantations is recruited principally from among the Tamils of Southern India, who have proved themselves to be, on the whole, very satisfactory labourers. The people—men, women, and children—are recruited from their villages by their future overseers, who are locally known as “Kanganies,” and while the majority return to their homes with accumulated savings, some elect to settle down in Ceylon for life. The approximate number of coolies employed is about 400,000.

By far the greater part of Ceylon tea is exported to the United Kingdom. Next to England, the most important customers are America, which took 25,500,000 lbs. direct and 14,000,000 lbs. re-exported from the United Kingdom, and Australia with New Zealand 32,000,000 lbs. direct.

The total export from Ceylon for 1929 was 251,000,000 lbs., of which the United Kingdom took 155,567,175 lbs.



## CHAPTER V

### TEA IN INDIA AND OTHER COUNTRIES

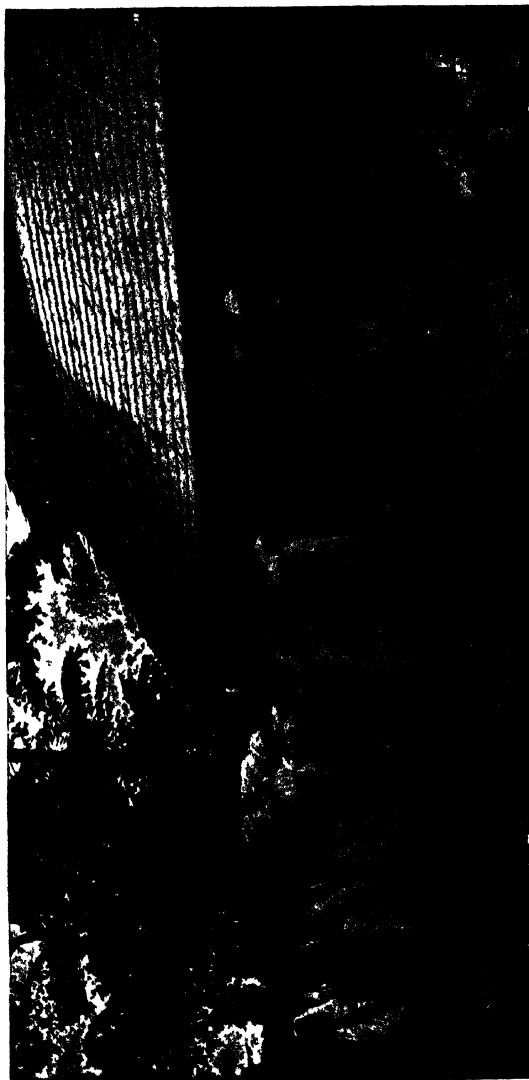
THE first practical suggestion for the establishment of tea plantations in India was made in 1788 by Sir Joseph Banks to the East India Company; but his suggestions were not acted upon until 1833, when experimental plantations were laid out in the district of Kumaon, in the Himalayas—the seeds and plants used being imported from China. No sooner had the experiments been initiated than attention was drawn to the statement that a tea plant indigenous to Assam had been discovered some years before, and that this variety was probably more suited to cultivation than the Chinese plant. The announcement was received with a certain amount of scepticism on the part of experts, but a travelling commission was sent to Assam to settle the matter. Although an undoubted tea-plant, now known as *Thea assamica*, was found to occur abundantly, it was regarded as a degenerate form of the Chinese variety; the committee therefore recommended the further cultivation of plants from China. In 1837, and the years immediately following, discoveries of extensive tracts of country in Assam bearing the indigenous tea were made, and in 1838 the first consignment of Indian tea, consisting of 488 lbs., was sent to London, the price obtained being 9s. 5d. per lb. These first shipments had been manufactured under many disadvantages, consequently they afforded no fair criterion of what might be possible in the future. The report, however, of London experts was satisfactory, and although the teas had different characteristics from

those of China tea, yet the consensus of opinion was distinctly favourable. So far very few engaged in the trade had had an opportunity of tasting British Indian tea, and in order that natural curiosity might be satisfied, later consignments were put up to public auction, and as a result very high prices were realized. The *Asiatic Journal*, in referring to the sales, remarked that—

“ The decision of the public, however, has not been unanimous ; Ladies, ‘ particularly those of mature age and judgment, whose jurisdiction in all matters connected with the tea-table ought not to be disputed, were enthusiastic in their praises of the new tea, but many of the lords of creation, especially stout gentlemen, whose previous habits had better qualified them for discussing the merits of port wine and bottled porter, compared it somewhat irrelevantly to chopped straw, and some pleased to display their facetiousness by observing that a mixture of gunpowder was wanted to make it go off.”

About this time the principal plantations came under the control of the famous Assam Company, and by 1854 the Indian export had risen to a quarter of a million pounds. Planting was then started in Cachar and Sylhet, and in 1858-9 the plantations of Darjeeling were commenced. Since that time the industry has made enormous strides, and several other districts have imitated the example of Assam and planted out large areas in tea. The following extract from *The Produce Markets Review*, of October, 1865, is interesting, considering the present magnitude of the Indian tea trade—

“ For all the general purposes of commerce China was long considered as virtually the only country



WEIGHING THE DAY'S PLUCKING IN CEYLON

from which we could expect to obtain supplies at all proportionate to our annually increasing consumption of tea. So little was formerly known as to the productive capabilities of the earth, that the mere existence of an article of produce in one land was deemed a conclusive argument against the possibility of its successful cultivation elsewhere. In 1855 one of the best-informed writers on political economy said :—‘ It may, perhaps (speaking of the tea plant), succeed in Assam, where its culture is now being attempted, but we are not sanguine in our expectation as to the result.’ A curious commentary on this somewhat qualified prediction is to be found in the fact that not only has the introduction of the tea plant in Assam been attended with the most complete success, but such is the intrinsic excellence of the teas themselves that they command extraordinarily high prices.

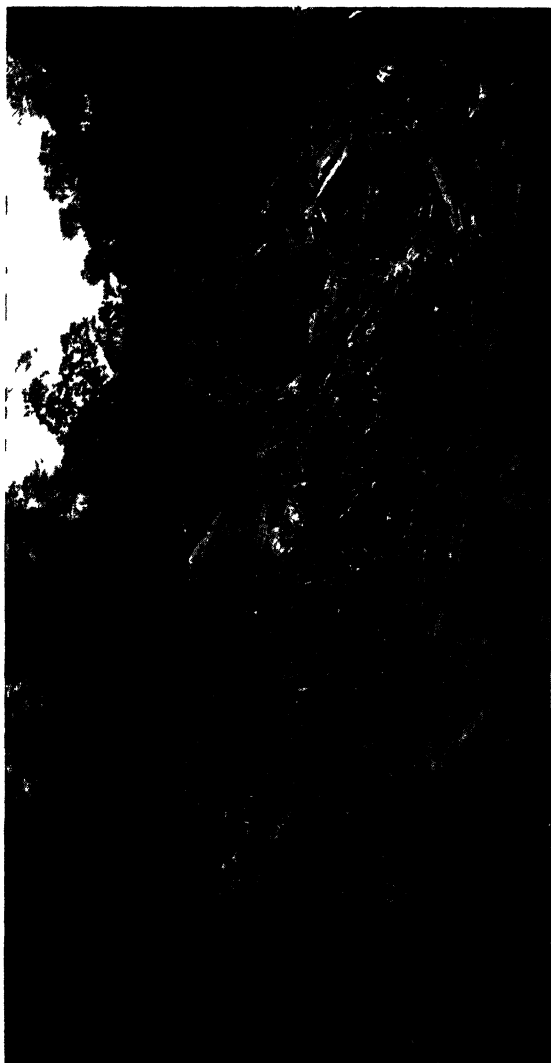
“ The name ‘ Assam ’ now proved a valuable passport to the European markets, and in some instances the Chinese had recourse to the puerile device of calling their tea by the name of ‘ Assam Pekoe Souchong,’ of course with the praiseworthy object of obtaining Assam prices for China tea.”

At the present day the largest tea districts of India are Assam, 427,237 acres ; Bengal, 193,499 acres ; United Provinces, 6,020 acres ; Madras, 62,820 acres ; Punjab, 9,715 acres ; Travancore, 61,376 acres ; other places, 7,597 acres.

This give a total of 768,264 acres, of which 705,688 acres were plucked, employing 906,787 people.

Of the remaining acreage unplucked, the plants were either too young or land had been abandoned.

In 1875 the total production was about 26½ million



*By the courtesy of*

**DEVASTATION BY FLOOD IN SOUTH INDIA**

Stones are on the Old Road

*Mr. T. C. Owen*

pounds. Of the total export in 1905 the United Kingdom took no less than 166,754,000 lbs., or, roughly

AREA AND PRODUCTION OF TEA IN INDIA FROM  
1906 TO 1929

	Acres	Production lbs.
1906	532,208	241,077,471
1907	537,849	244,292,572
1908	548,127	247,024,517
1909	555,305	258,136,408
1910	563,554	263,269,353
1911	574,575	268,602,692
1912	591,833	297,878,089
1913	610,094	307,249,669
1914	624,497	312,976,208
1915	634,940	371,836,068
1916	648,937	368,428,719
1917	667,088	371,296,338
1918	679,912	380,458,975
1919	693,431	377,055,639
1920	702,359	345,205,434
1921	709,006	274,263,771
1922	707,733	310,598,443
1923	711,209	375,355,689
1924	714,710	375,255,874
1925	727,663	363,506,571
1926	739,423	392,933,182
1927	752,930	390,919,845
1928	773,023	392,000,000
1929	773,000	430,000,000

speaking, seventy-six per cent. In 1906 the quantity was 176,299,335 lbs., in 1907, 169,474,706 lbs., while in 1929 the large total of 324,000,000 lbs. was reached.

The next best customers were America, Australia,

and Canada. India is also cultivating the "habit" of tea drinking, and whilst exact figures are unobtainable, it is estimated that 40 to 50 million lbs. of each year's production is kept back for home consumption.

### TEA IN AFRICA

Next to Ceylon and India, South Africa is by far the most important of the tea-producing colonies of the British Empire, and the industry is one of considerable value to the country. From the most reliable records it would appear that the tea plant was first introduced into Natal about 1850, from that "clearing-house of the botanical world"—Kew. The most important fact was that the plants flourished in their new home. Tea-growing as a definite industry, however, was not seriously undertaken until about a quarter of a century later. It will be remembered that the destruction of the coffee plantations by a fungoid disease was essentially the cause of the existence of the now splendid Ceylon tea industry, and it was precisely the same misfortune which in 1877-78 necessitated Natal planters seeking a new field for the investment of their capital. When it became evident that coffee was doomed as a cultivation of first-class importance, Mr. (now Sir) J. L. Hulett became convinced that, with suitable plants, tea would prove the salvation of the planters. The matter was brought before the Lower Tugela Planters' Association, and on the Government being asked to render assistance, free freight on seed imported from India was offered to the colonists. The latter formed a syndicate to defray expenses, and seed from Calcutta was landed in Natal in March, 1877, and immediately planted out in nurseries. Unfortunately, about the time the seedlings were planted out a severe drought visited the country, and out of 4,000 plants successfully raised from the seed only 1,200

survived. The seriousness of this set-back was increased by the fact that the surviving plants would require three or four years before they would yield any seed for nursery purposes, and it was not until 1880 that seed was gathered from them, the quantity obtained being barely sufficient to plant five acres. In the following year, however, the planters returned to their task with undiminished determination, and, in spite of many subsequent discouragements, the acreage gradually increased until at the present time it extends to over 4,000 acres. The greater part of this area is in the Lower Tugela Division of the country of Victoria, and tea is also grown to a small extent in the Alexandra Division.

The most productive tea gardens are at an elevation of about 1,000 feet, the land at this altitude being generally of an undulating character, well watered, and the climate sufficiently humid to encourage leaf-production. The plucking season commences in September and lasts until June of the following year, during which period each bush is picked about sixteen times.

Recent developments in Nyasaland have proved that this part of South Africa is well suited for tea growing. For 1929 over 2,000,000 lbs. were exported to the United Kingdom with every prospect of large increases in the near future.

The Union of South Africa imported 11,466,000 lbs. in 1928, whilst other countries on the Continent took large quantities; Morocco, 11,500,000 lbs.; Egypt, 13,320,000 lbs.

#### TEA IN THE CAUCASUS

For several years prior to the War efforts were made by the Russian Government and private individuals to establish a tea industry. Imperial plantations of about





*By the courtesy of*

**ON A CEYLON TEA ESTATE**

*Liptons Ltd.,*

400 acres situated in Chackra produced in 1905 about 21,000 lbs.

The Supreme Economic Council in Russia are now giving earnest attention to tea development, and to provide a fund for this purpose a tax on imported tea is proposed. Development is chiefly confined to Georgia and Ozurgetsky districts. In 1923 the acreage was largely increased, many experimental fields established, and in one producing district records show that 8,000 lbs. were produced.

#### OTHER TEA-GROWING COUNTRIES

A small tea industry also exists in Jamaica. In 1868 an acre of land was planted with tea by the Government, and, as the experiment met with some considerable success, the area was later increased. In 1887 there was one private tea-garden in the island at Portland Gap, about twelve miles from Kingston, with twelve acres under cultivation. Nine years later further experiments were made at Ramble in St. Ann, and the results being successful, the cultivation has gradually increased until, at the present day, there are about ninety acres under the crop.

In Fiji an experiment in tea planting was made in 1880. The island chosen was Taviuni, and an area of thirty acres was planted out with the Assam hybrid; the area was gradually extended to several hundred acres, when it became known as the Alpha Tea Estate. The success of this garden—situated within four miles from the coast and at an altitude of 1,000 feet—led to the establishment of another plantation in the neighbouring island of Vanua Levu, known as the Masusa Estate. Fiji tea is chiefly consumed locally.

Tea is also cultivated in the State of Johore, in the Straits Settlements, and small plantations exist in

Burma, the Andamans, and Tonquin. Experiments have also been made in British Central Africa. In Java a valuable export trade is being gradually built up. The first seed was introduced into Java from Japan in 1827 by von Siebold, and young plants were raised in the famous botanical garden at Buitenzorg, but a few years later better varieties were obtained from China by Jacobsen, who may be regarded as the founder of the tea industry in Java.

Java with Sumatra is now the third largest producer (excepting China). The progress in this country in tea development is more marked than in any other.

From 6,000,000 lbs. exported in 1882, production in 1929 reached 136,000,000 lbs., of which Australia took 19,000,000 lbs., U.S.A. 5,000,000 lbs., Holland 26,750,000 lbs., and the United Kingdom, 67,000,000 lbs.

## CHAPTER VI

### MODERN METHODS OF CULTIVATION AND MANUFACTURE

WE will now turn our attention to the cultivation and manufacture of tea as practised by the European planters of Ceylon and India.

In opening out a new tea garden the first step is the establishment of a nursery for raising the young plants which are to fill the garden. A piece of jungle near the new plantation is cleared ; then the soil carefully hoed, and prepared for the seed. The land is now divided into beds between which are shallow trenches, and when the soil is sufficiently prepared, the seed, which has been allowed to sprout in seed beds, is planted out and the ground covered with thatching to prevent scorching by the sun. The nursery is carefully fenced in to prevent damage by cattle and wild animals. The seed is obtained from plants grown in a special " seed garden " where the bushes are not pruned in ordinary cultivation, but allowed to attain their full growth.

Meanwhile the clearing of the future garden has been proceeding, and, when complete, the soil is carefully hoed and then marked out with stakes, about four feet apart, indicating the lines or rows which are to receive the young tea-plants from the nursery. The roads and drains of the plantation are dug by the coolies, and then transplanting commences. The young plants are taken from the nurseries when about twelve inches high, and planted in the holes prepared for them, care being taken to keep the wall of the earth round the roots of the seedling intact.

The plants become well established and ready for picking when three years old, at which time they are sending out abundance of young leaf-shoots, known as the "flush." From this time onwards the picking or plucking is carried out at regular intervals, and, to induce the formation of abundant flushes, the bushes are pruned from time to time, a process which also keeps the growth of the plant within bounds to allow of the plucking being conveniently performed. In the colder climates of China and Japan, the flushing ceases in the winter ; but in Ceylon it goes on all the year round.

In Ceylon the flush is ready for picking every ten or twelve days. The process consists in plucking the young shoots, to include the third or fourth leaf from the bud, and upon the size of the leaf depends the quality of the tea manufacture. Thus, plucking is designated as "fine" when the bud at the top of the shoot and the two young leaves just below it are taken, "medium" when the bud and three, "coarse" when the bud and four leaves are taken. From the "fine" plucking the tea known as "pekoes" are made, "flowery pekoe" being derived from the youngest leaf, "orange pekoe" from the next youngest, and "pekoe" from the third leaf ; "souchongs" and "congous" are prepared from the larger leaves. Pekoe-souchong, as the name indicates, is intermediate in quality between pekoe and souchong.

The flush is gathered by the women into baskets and when the latter are full they are taken to the factory to be weighed. The leaf is carried to the upper floor of the factory, where it is thinly spread out on light open-work shelves of canvas, or on wire-meshed trays placed one above the other, in order that the drying or "withering" of the leaf may take place. In good weather the correct degree of flaccidity is reached in

seventeen or eighteen hours ; but if the weather is damp artificial heat is employed. The withered leaf is then collected from the trays and thrown down through shoots into the rolling machines, which are generally situated on the ground floor. The object of the rolling process is, firstly, to bruise the leaves so as to allow the leaf juices to become mixed, and, secondly, to impart a twist or curl to the leaf. The rolling machines consist essentially of a table with a central depression to hold the leaf and a hopper above it, the two moving one over the other with an eccentric motion. Any required degree of pressure can be put upon the mass of leaf that is being rolled, and at the end of about an hour the door in the bottom of the machine opens and the roll falls out, the twisted leaves, which have become somewhat yellowish, clinging together in masses which are broken up in a machine known as a "roll breaker" ; a "sifter," which separates the coarser leaf from the finer, is usually attached to the breaker. The next process, the fermentation process, is one of the most important in tea manufacture ; for on its efficient accomplishment depends to a large extent the quality and character of the tea. Further, the *omission* after this stage in the manufacture results in the formation of "green" teas, which formerly enjoyed great popularity. In the preparation of black teas, then, the rolled leaf is piled in drawers one above the other or on mats, and then left to ferment or oxidise, air being allowed free access. The process occupies a varying length of time according to the particular garden and the condition of the weather. During the fermentation the leaf emits a peculiar odour and changes colour, and after about two hours, when the right degree of copper-brown colour has been attained, the leaf is "fired" in the drying machines, the heat arresting all further fermentation.



In many factories the leaf is re-rolled previous to firing. Besides the checking of the fermentation, the object of the firing process is to remove all the moisture without driving off the essential oil and other constituents, upon which the value of the manufactured article largely depends. The firing is effected by one or more of many types of machines, all of which act by passing a current of hot, dry air through the damp fermented leaf until it is dry and brittle. A commonly used type of machine is the "Sirocco," to the illustration of which the reader is referred. The tea is then taken to the sorting-room, where it is sifted into grades by a machine consisting of a series of moving sieves of different sizes of mesh. The resulting siftings are classed as Flowery Orange Pekoe, Orange Pekoe, and Pekoe No. 1, and are known as "unbroken teas." The first mentioned is the least coarse and finest tea, but the coarser tea which does not sift through the meshes is transferred to "breaking machines," and broken up and again sifted, the products being known as Broken Orange Pekoe, Pekoe No. 2, etc. The tea dust which accumulates during these processes is kept separate from the better qualities, and is shipped as "dust" and "fannings."

The processes in the manufacture of green tea in India and Ceylon are similar in most respects to those employed for black tea. The various grades resulting from the sifting receive names different from those applied to black teas, the principal varieties in descending order of quality being Young Hyson, Hyson No. 1, Hyson No. 2, Gunpowder, and Dust. The tea is then packed into lead-lined chests, stamped with the name of the garden or factory, and transported to the quay at Colombo, Calcutta, or Chittagong, whence it is shipped to England.



## BRICK TEA

A most interesting variety of tea is that so extensively used in Tibet and some parts of Russia, and known as "Brick Tea." The product may be briefly described as very cheap and coarse teas which, with the small twigs, have been compressed into blocks. The chief centre of the industry is at Ssu-chuan, in Western China, and it has been estimated that the Tibetans annually import the tea to the extent of from twenty to thirty million pounds. Very little care is exercised in the plucking process. The main object of the cultivator is to obtain a good weight of the product with as little trouble as possible, and hence the first six or seven leaves are roughly stripped from the twigs or, as is more generally the case, the twigs, to a length of perhaps twelve inches, are literally reaped from the plant. There is no withering or regular fermentation process; the twigs and leaves are at once heated in thin iron pans for a few minutes, and then tied up in bundles and sacks and taken away to the factories or "hongs," where the material is piled in heaps and allowed to ferment. After being dried in the sun, the tea is sorted into grades, when it is steamed and finally pressed into a shallow brick-shaped mould by means of a heavy rammer; it is often necessary to mix the chopped twigs with a paste made from glutinous rice in order to make them adhesive. In three or four days the bricks have become quite hard, and, after being stamped with the maker's name or device, are wrapped in paper and made into strong packages for transport to Tibet.

Large quantities—some 20,000 tons per annum—of brick tea are made at Hankow, and the same town also manufactures "Tablet Tea," both for the Russian market. The bricks are very different from the Tibetan

article, for they are manufactured from tea dust of good quality, the dust being either purchased as such by the factories (which are under Russian control), or else tea is bought and ground to powder by machinery. The tea dust is carefully sifted into grades and steamed for a few minutes, after which it is cast into bricks, in separate moulds, by hydraulic pressure. The bricks are allowed to dry in the moulds for two or three weeks, when they are packed in bamboo baskets for transport. The Tablet Tea is prepared from the finer grades of tea destined for European Russia.

#### OTHER "TEAS"

The famous Paraguay Tea, or Yerba de Maté, is one of the most important economic products of South America. The tea is derived principally from the leaves of *Ilex paraguariensis*, although an investigation carried out at Kew a few years since showed that several varieties of this species were concerned in the product, and that it was probable that other species of the same genus were also used as a source of the tea. Further, there was evidence to show that, in addition, the leaves of *Symplocos lanceolata* and *Elaeodendron quadrangulatum*, plants belonging to quite different families, were also used to the same purpose.

By far the greater bulk of maté, however, is prepared from *Ilex paraguariensis*. The plant is a shrub belonging to the natural order, *Aquifoliaceae* (Holly family), and bears oval leaves about four or five inches long, with serrated edges. It is found commonly in Brazil and Paraguay, where there are also regular plantations; but the leaves are extensively used throughout South America, and several million pounds of the prepared maté are annually exported from the latter country



*By the courtesy of*  
**SIROCCO ENDLESS CHAIN PRESSURE DRIER WITH AUTOMATIC FEEDER AND SPREADER**  
*Messrs Davidson & Co*

to various parts of the continent ; small quantities are also sent to Europe.

In the preparation of maté the leaves are not plucked from the plant as in the case of ordinary tea, but large leafy branches are cut from the shrub and placed on hurdles over a wood fire until sufficiently roasted. The dried branches are then placed on a hard floor, and the withered leaves beaten with sticks, after which they are reduced to a coarse powder in rude mills. The product is then ready for packing in skins and leather bags. There are said to be three principal grades of maté in the South American market, viz., Caa-Cuys, which is the half-expanded leaf-buds ; Caa-Miri, the unroasted leaf from which the principal veins have been removed ; and Caa-Guaza, or Yerba de Palos of the Spaniards, which is prepared from the roasted leaves together with the leaf stalks and smaller twigs. The infusion is prepared for drinking by putting a small quantity of the tea in a cup with a little sugar ; a drinking-tube or *bombilla*, with a wire network or perforations at the bottom, is then placed in the cup and boiling water poured in the maté. When sufficiently cool, the infusion is sucked up through the tube. Maté has an agreeable, slightly aromatic odour, and a somewhat bitter taste. It is very refreshing, and is a valuable restorative, especially after great physical exertion, while it also possesses mild diuretic and aperient properties.

Another species of *Ilex* (*I. cassine*) was the source of the famous "black drink" of the North American Indians, which is known under the name of "Youpon." The home of the plant is along the eastern and southern shores of the United States, and it is not found to any great distance inland. It is an elegant shrub ten to fifteen feet high, but sometimes rises into a small tree



of twenty to twenty-five feet The oval, toothed leaves, which are about an inch long and very smooth, were once extensively used by the natives of North America as tea, the preparation of the beverage being very similar to that of ordinary tea.

The method of preparing cassine was comparatively simple The leaves and tender young branches were carefully picked, the season chosen being the time of harvest The leaves were dried in the sun or shade and afterwards roasted in ovens, remains of which are still found in the Cherokee region The roasted leaves were kept in baskets in a dry place until needed for use. An infusion of cassine leaves with boiling water gives, after cooling, a liquor of little taste and slight odour. But, if boiled for an hour, the infusion becomes a very dark liquid, resembling strong black tea of an odour not unlike that of Oolong tea The taste is similar to that of inferior black tea, quite bitter, but with little flavour

Besides the different varieties of "tea" described above there are several plants the leaves of which are used by people in various parts of the world for the preparation of a refreshing drink Thus, in the Australian colonies the leaves of species of *Leptospermum* and *Melaleuca*, plants belonging to the Eucalyptus family, have been employed as tea, though the quality is not all that could be desired The famous "Bushman tea" of South Africa is prepared from *Cyclophia genistoides*, and the lemon grass yields an infusion which is drunk by natives of some of the inland districts of India "Bourbon tea," sometimes known as "Faham tea," is especially interesting since it is one of the very few examples of a product of economic value derived from the Orchid family The orchid in question is *Angraecum fragrans* which is found growing as an

epiphyte on the trees of the forests of Bourbon, or Réunion, and Mauritius. It is a perennial, producing a few green leaves which have a persistent vanilla-like odour. The beverage is prepared by pouring cold water on to the dried leaves, and boiling the liquor for about ten minutes in a tea kettle or other closed vessel. It is then emptied into cups or tea-pot, and sweetened according to taste. The tea possesses an aroma of great delicacy, and leaves a lasting fragrance in the mouth.

## CHAPTER VII

### TAXATION OF TEA

THE first mention of tea in the Statutes was made in the Acts 12 Charles II, c 23 & 24, 1660 A number of Excise duties were granted to the King, amongst which was the following—

“ For every gallon of chocolate, sherbet and tea made and sold, to be paid by the maker thereof . . . . 8d.”

and a like amount was granted as a duty of Excise by the other Act quoted. But the collection of this duty upon the liquor of tea was found to be so burdensome and expensive, as well as unequal in its bearing upon the dealers, that the provision in question was repealed, and a net duty of 5s per lb was imposed in 1698 In 1745 the duty was altered to 1s per lb. plus 25 per *ad valorem*, calculated on the prices realised at the East India Company's sales, this duty being over and above the Import duties In 1834 the whole of the tax became, and has ever since remained, a duty of Customs Passing over various changes, the period is reached in 1836 when the duty took the form of a single specific rate, which up to the present time has been so levied.

In 1836 the *ad valorem* duty was abolished and a net rate of 2s 1d was imposed.

			<i>s</i>	<i>d</i>	
In 1840	the duty was	2	1	and 5%	additional
„ 1853	„ „ „	1	10	per lb	
„ 1854	„ „ „	1	6	„ „	



s.    d.

In 1855 the duty was 1    9 per lb.  
 1857    "    "    "    1    5    "    "  
 1863    "    "    "    1    0    "    "  
 1865    "    "    "    reduced to 6d. per lb., and  
 remained fixed at this rate until the year 1890 when it  
 was reduced to 4d. per lb.

On March 6th, 1900, Raised to 6d.  
 April 16th, 1904    "    "    8d.  
 May 1st, 1905,    Reduced „ 6d.  
 May 14th, 1906    "    "    5d.  
 Nov. 17th, 1914,    Raised to 8d.  
 Sept. 21st, 1915,    "    "    1s.  
 June 2nd, 1919, Preferential duty of  $\frac{1}{8}$ d. on  
     British grown tea first established.  
 May 1st, 1922,    Reduced to 8d.  
 May 5th, 1924,    "    "    4d.  
 April 22nd, 1929 all tea duty repealed.

Tea yielded, in 1913, a net revenue of £6,151,879, as against £6,159,070 in 1912. The quantity retained for home use was 295,707,419 lbs. in 1913—in 1911 it was 284,962,919 lbs., and in 1922, 411,848,544 lbs. The following table shows the progress in the consumption of tea during the past seventeen years—

		Annual Consumption. lbs.	Consumption per head. lbs.
1912	..	295,409,486	6·47
1913	..	305,690,000	6·61
1914	..	317,531,549	6·84
1915	..	317,334,742	6·87
1916	..	302,517,025	6·55
1917	..	277,665,198	6·02

		Annual Consumption lbs	Consumption per head lbs
1918	..	311,162,822	6·74
1919	..	388,464,435	8·42
1920	..	392,823,757	8·35
1921	..	410,717,000	8·70
1922	..	411,848,544	8·73
<sup>1</sup> 1923	..	387,551,413	8·86
1924	..	396,512,192	8·82
1925	..	401,996,410	8·85
1926	..	408,836,620	8·91
1927	..	416,152,258	9·02
1928	..	423,728,291	9·15

<sup>1</sup> From 1st April Irish Free State excluded. Figures show yearly consumption, 20,000,000 lbs.

## CHAPTER VIII

### PUBLIC SALES, SAMPLING AND BUYING

HAVING now described the various processes of manufacture, etc., it will be interesting to follow the tea to London, where nearly the entire quantity consumed in the United Kingdom, or exported from England, is sold. When the teas arrive they are immediately taken to one of the many London public bonded warehouses, where they are weighed by H.M. Customs, inspected, and stored until the delivery foreman is empowered to release them. The merchant, or his agent, who owns the shipment selects a broker to whom instructions are given to sell at the Public Sales in Mincing Lane. This is the usual custom, although in certain cases the produce of the gardens does not pass through the salerooms, but is sold by private contract. The next step is the notification to the wholesale buyers that certain teas are to be disposed of. This is accomplished by the selling broker issuing catalogues to all the largest operators. The conditions of sale are clearly set forth, and together with other details is given, date of sale, the garden or gardens where the teas were grown, the quantity and description of each grade, and the lot number. The public warehouse is also advised that particular teas are to be offered at Public Sale, and it is the duty of the warehouse keeper to see that representative packages of each parcel are put "on show." The large wholesale houses who are interested in the coming Auctions then send messengers, known as "samplers," to the various warehouses named in the catalogues, and on presenting their authority to draw

the teas, a small sample is taken from the chest set apart for this purpose, and given to the representatives of the prospective buyer. So that no loss of tea may accrue to the owner, "returns" of an equal weight and quality to the samples taken away are left at the warehouse by the "sampler."

On returning from the warehouses all the tasting samples are immediately put in small tin boxes; this is important as tea very soon becomes "papery" if left wrapped up. Each tin has a number corresponding with the one which has been stamped in the buyer's office by a hand machine in the margin of the catalogue opposite the tea represented, *e.g.*—

Jorehaut, lot 21 Broker's Box 844 30 chs. Pekoe 655  
 Khongea, „ 22 „ „ 845 90 „ „ Souch. 656

655 is the number of the small box which contains about 2 oz. of Assam Pekoe representing the thirty chests from the Jorehaut Garden, while in box 656 is a sample of Pekoe Souchong taken from the bulk of ninety chests from the Khongea estate. 844 and 845 are the numbers of the boxes which are used by the brokers to contain representative samples of the same teas in their own offices. 21 and 22 are the ordinary "lot numbers" in the catalogue which are used by the selling brokers to represent the various parcels when the public auctions take place.

When a sufficient number of teas have been boxed, the work of the expert taster commences. A large Indian sale in the busy season will comprise 50,000 packages represented by about 1,200 different teas. It has been fully explained that each parcel has its corresponding sample, so that it means that for one sale alone as many as 1,200 different teas have to be tasted and valued.



*By the courtesy of*

## AN INDIAN TEA FACTORY

*The Indian Tea Association*

The majority of large wholesale houses have more than one buyer for Indian teas. During each week in the season the number of samples to be examined minutely and critically is so large that it is nearly impossible for one man to give proper attention to the offerings in the time available between the sales. The method adopted, as a rule, is for one to taste all the Pekoe Souchongs, Pekoes and Orange Pekoes, while a second buyer is responsible for the Dusts, Fannings, Broken Pekoes, and Broken Orange Pekoes, although the arrangement of the grades varies in different sale-rooms. It sometimes happens that a buyer is anxious to secure only tea "for price," that is to say, the lowest quoted at the time. This necessity too often arises, owing, unfortunately, to the demand for common tea being now so much in evidence. He, therefore, proceeds to pick out, judging by the appearance of the leaf only, the inferior Pekoe Souchongs and without troubling to taste or otherwise examine them, values "on the nose." This expression means that the buyer judges the value of the teas under review by simply smelling them. Orders are then without loss of time placed with the selling brokers so that the bids submitted may be "first in." The procedure, however, is quite different when the aim of the taster is to select a variety of teas which are to be eventually offered to the discriminating and enlightened growers in the United Kingdom. The teas to be tasted and valued are first of all sorted out into grades, *e.g.*, the Dusts, lowest Pekoe Souchongs, Broken Pekoes, Pekoes, Orange Pekoes and Broken Orange Pekoes are separated into different piles, while the Darjeelings are reserved for a special liquoring. So that the taster may have a basis upon which to value, "standards" are used. These are teas either in stock or parcels recently sold which are taken to form a guide

as to the quality and value of the offerings under consideration. It will be remembered that each lot to be judged is represented by a small sample which is in a numbered tin. From each box is taken a small quantity—the weight of a sixpenny piece—which is placed in a pot especially made for tasting purposes. When twenty or thirty teas have been “weighed in,” the batch is ready for watering. Water which has just reached the boiling point is *always used*, and under no circumstances whatever is it brought to a point of ebullition a second time. This is most important, and it is greatly to be deplored that few people understand how much a cup of tea loses in flavour and aroma by not making it properly.

The teas are allowed to stand five minutes, the time being calculated with a sand glass, and at the expiration of this period the pots are turned over into small cups. This allows the tea to run out while the lids on the pots prevent the leaf entering the liquor. Each pot is then drained, care being taken that the liquor only, and not the leaf, passes into its respective cup. The “infusion,” or scalded leaf, is now placed on the top of the inverted lid which in turn rests on the pot, by this means it can be examined while the liquor is tasted. A batch, as a rule, is tasted from left to right, the inferior teas receiving first attention. As each parcel is valued the limit to which the buyer is prepared to go is placed in cipher in the catalogue, by an assistant, so that when the sales are attended the purchaser will easily recognise the teas he has selected, and the prices he has decided to pay. The procedure in the tea sales is the same as that usually adopted in many other auctions. The teas are sold at so much per pound, advances being made by  $\frac{1}{4}$ d. The auctions are conducted at a great speed, and when the teas to be disposed



LINE WATCHMEN ON A CEYLON PLANTATION



of are low priced, bidding is extremely rapid, 300 lots often being knocked down in an hour. Each item is not separately announced as is usually the case in the majority of auctions, but directly one parcel has passed the selling broker's hammer, the next one is immediately bid for. When the market is brisk the lots are knocked down very rapidly, and it is only those with a clear head and considerable experience, who are able to follow the various transactions with any degree of certainty. When the season is in full swing, the Indian sales take place twice a week, on Monday and Wednesday. The major portion of the offerings are brought forward in the early part of the week, the balance being sold on Wednesday. Ceylons are offered on Tuesday and Javas on Thursday. China public sales are not held regularly owing to the small quantities available, nearly all purchases being made by private contract.

At the conclusion of the auction the buyer applies at the offices of the selling brokers, and obtains orders to enable him to sample the various lots he has purchased. These orders are presented at the Public Bonded Warehouses where the particular teas are stored, and in exchange for a certain weight of "returns," the same number of pounds taken from bulk are given. It will be instructive to explain at this point, some of the regulations dealing with sampling, as often a grocer, when opening a chest, wonders why a pound of tea wrapped in paper has been placed on the top of the package. The reason is that it is necessary to keep the original Customs weight of each chest intact, consequently when a pound—and not more than one pound can be taken out of a chest without special permission—is required as a sample, the one drawing the sample is required to supply a pound of tea similar in style, and

approximately of the same value, which takes the place of the tea abstracted from the bulk.

It is, of course, impossible for the individual who is responsible at the warehouse for this work to taste the various "returns," consequently the tea which is taken in exchange is judged solely by the appearance and "nose" of the leaf. In case of complaint, however, from the ultimate buyer of the package or packages, it is possible to trace who supplied the returns. By referring to the paper containing them it is generally found to bear some distinct mark or number, the significance of which is known to the warehouse authorities, and it is then not a difficult matter to find out who has been supplying inferior returns. It is satisfactory to know, however, considering the thousands of packages sampled, that the proportion of complaints is infinitely small. The quantity of tea drawn from the bulk of course varies according to the requirements of the buyer. If the parcel has been purchased for blending purposes, one pound is generally drawn; the bulk so represented is then tasted with the sale sample from which the parcel originally was bought. This is very important as it sometimes occurs that a wrong tea has been put on show at the warehouse. Should a mistake have been made the bulk would be different and the buyer could, of course, then repudiate the contract. Another contingency is that the bulk turns out inferior to the original sample. In such a case the buyer would satisfy himself that a correct sale sample had originally been placed in his box by his own sampler, after which he would notify the selling broker that the purchase was not up to sample, and consequently the contract was void. Similar preventive measures are taken if the teas are to be resold in the original packages, except that as samples have to be sent to the various representatives

of the wholesale houses it will be necessary to have several pounds drawn from *different* packages.

The morning following day of sale, the agents, or representatives, have before them samples of all the purchases. These are tasted and various lots selected as being suitable for the district. The grocer to whom the pick of the basket is then offered has the satisfaction of knowing that his requirements are being well looked after, and if his knowledge of tea is only meagre, yet he will not go far wrong in his purchase.

Anyone who has studied the position of the single shop grocer must have been impressed with the difficulties with which he is surrounded. This condition can be greatly improved if the up-to-date grocer pays more attention to his tea trade. He may find it desirable to buy his teas in original packages and do his own blending, or, on the other hand, he may decide to keep smaller stocks and be satisfied to purchase teas already blended. Whatever course he pursues it is greatly to the advantage of the grocer, if *he knows something about the tea he is selling*, and how value compares with that offered by others.

An expert in tea tasting is guided in forming an opinion by certain indications which can only be gained by experience, whereby he is able to recognise if a blend is up to a certain standard or not. It is, however, difficult to tabulate these signs in writing, but a natural instinct will often help one to reach a correct deduction. Let it be assumed that a blend has been prepared for retailing, say at 2s. 4d. The result will most likely satisfy the grocer, yet the public, for a reason that cannot be defined, prefer to purchase its teas elsewhere. As a rule, customers do not really know what they want, but they *do* know what they like, and therefore the obvious position to take up is to follow the line of least

resistance, and give them a tea which pleases the palate. It is quite possible, however, when a grocer has the knowledge, to educate his customers to cultivate a taste for a blend made up on individualistic ideas. The palate soon gets used to the flavour of a particular tea, and resents any change whatever, be it good or bad. It is therefore very important to maintain a perfectly uniform flavour. By degrees, if any particular character is aimed at, the buyers can be trained to like it, and then they will accept no other. The process of palate education has, however, to be very slowly carried out, but it may be effected by adding slightly increased proportions of flavouring tea from time to time. This is illustrated in the case of Oolong. This peculiarly attractive tea from Formosa, in careful hands, enhances considerably the delicacy of a blend, but to add the full and correct proportion at the outset would, in many cases, bring complaints. If, however, a small quantity is at first used, and increased by degrees, in subsequent blends, it will have the effect of imperceptibly changing the tea, and give it, what ought to be the ideal of every distributor, a distinctness of character.

The younger generation of grocers has had little opportunity of acquiring a thorough knowledge of tea, but in these strenuous times, when competition is so severe, it is increasingly important that the family grocer should have a clear and certain perception of one of the most interesting and absorbing trades in the world. In the preceding pages, many and interesting processes of manufacture in India, Ceylon, and China have been dealt with; the sales in the Mincing Lane Market described, and now the question may be asked by those who have had few chances of gaining a practical knowledge of the tea trade—How can a grocer, or grocer's assistant, acquire sufficient information to enable him



*By kind permission of*

WEIGHING THE GREEN LEAF .

*Mr. Freds Kapp*

to buy better, sell with intelligence, and increase his trade ? To be a good judge of tea, to be able to value it to a fraction of a penny, and also to recognise the numerous growths by the smell and appearance, should be the purpose of every distributor. The aim of the skilled grocer should be to study the tea trade, and to exercise and to publicly claim a special knowledge of what is really a very skilled business. Such an ideal is difficult to attain, and no theoretical study will convey full knowledge. One imperfectly acquainted with the subject can only become proficient by years of constant practice and practical tasting.

## CHAPTER IX

### DISCRIMINATING TASTING

THE following hints are not new, and are, indeed, fairly obvious to those experienced in the tea trade, but they may be useful for the information of younger grocers who are enthusiastic in their calling, and anxious to know more than their fellows about the commodities which are continually handled in the course of business. Assuming that the aspiring student has not yet been initiated into the mysteries of tea-tasting, it will be desirable at the outset to learn how to discriminate between the tea from India, Ceylon, Java, and China. It is absolutely necessary that extreme care be taken in weighing the small quantities of tea for each cup. In some instances the leaf has been weighed by using the ordinary shop scales, but such means can hardly be accurate, and it will pay in the long run to purchase a small pair of carefully balanced scales which are made for the special purpose in view.

The next undertaking is to provide a number of pots and cups. These can be procured from a few firms who make a speciality of this kind of ware, or any of the wholesale houses will obtain them at a small cost. The best kind to use are those without a spout; they are easier to keep clean and are not so likely to get broken. In selecting the tea-tasting cups, an essential point to bear in mind is, that each pot must be of an equal cubic capacity. In the case of a pot being larger, more water in proportion to the weight of tea would be added compared with the others, and a misleading batch would be

the result. It is a good plan to have the bases of the pots numbered, for a reason which will be apparent later. Water taken cold from the tap and brought to a boiling point is used. Under no circumstances whatever must reboiled water be employed. A time glass is not a *sine quâ non*, as a watch can be used. It is indispensable, however, that the batch should not stand longer than five minutes, and means must be taken to ensure this. Having secured the necessary apparatus for practising the art of tea-tasting the next consideration is what teas to select for the initial experiment.

The remark has often been made by casual and inexperienced critics, when giving their opinion on a number of teas: "I can see very little difference, they taste all the same." In such instances the palate had not been trained to discriminate and therefore the first thing to be done is to remedy this defect. Obtain samples of teas previously mentioned—

- Viz. : 1. Indian  
2. Ceylon  
3. China  
4. Java

For the purpose of the first practical test, it will be desirable to procure an Assam tea to represent India; a Flavoursy Pekoe or Orange Pekoe, to give a clear idea of the characteristic quality of teas from the Island of Ceylon; a Kintuck, which is known as Moning, or Black Leaf, as a type of China tea; while a Java Pekoe will give a very good impression of the last growth in the above list. Notice first the leaf. The China tea is quite distinct from the others, while there will be apparent a similarity between the Ceylon, Java and





*Mr Fritz Kapp*

## WITHERING TEA

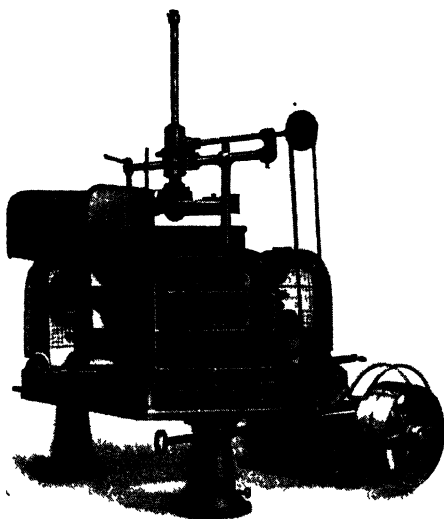
*By kind permission of*

Indian. In a great number of instances Java tea is grown from Assam Seed and a pure Java is sometimes mistaken for an Indian tea. After studying the appearance of the leaf carefully, smell each sample and impress on the mind the aroma of each growth. After a few trials it will not be difficult to distinguish the various teas "by the nose," and in time a very fair estimate of their value can be also arrived at. Now take a small quantity of each sample—the correct amount for the standard pots is the weight of a new sixpence—and make four cups of liquor. Before commencing to taste the teas the temperature should be moderate, just pleasant to the palate. If the teas are too hot, it increases the difficulty of detecting the difference in flavour and character. While waiting for the liquor to cool, the time can be profitably employed by studying the infused leaf left in the pots. Turn it out on to the inverted lid, and press out any superfluous liquid which has been absorbed. If the various samples under consideration are of fair quality, the fact will be recognised in the bright colour of the steeped leaf. Critically examine each specimen and note the distinguishing tinge of the Ceylon, Indian and Java, as compared with that of the China tea.

When the novice feels confident that he can tell the difference between the four products, he can arrange an interesting test of his knowledge. Weigh duplicates of each sample and before watering the eight pots have them thoroughly mixed. The reason for having the bases of the pots numbered will now easily be seen. Endeavour now to place the teas in their original order. The two Assams together, the two Ceylons, and so on. This exercise will be most useful, and after one or two trials, the problem will present no difficulties. The next stage is to learn something of the teas grown in the

numerous districts in India. The following are the most important—

Darjeeling	
Assam	
Dooars	
Sylhet	India
Travancore	
Cachar	



*By the courtesy of*

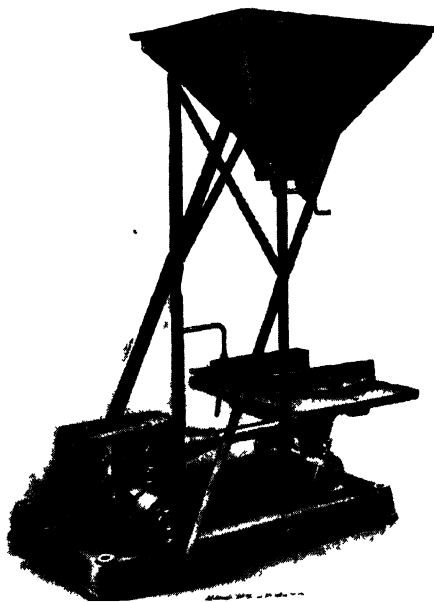
*Messrs. Davidson & Co.*

**SIROCCO OVERHEAD CRANK BEARING TEA ROLLER**

(View of Roller arranged for right-hand Drive)

As in the first experiment, samples must be obtained of the teas enumerated, and then proceed as already described. The distinct flavour of Darjeeling will be immediately noticed, while a similarity between Travancore and Ceylon will also be observed. It is impossible

to describe in words the characteristics of these districts of India, and the only way to be fully acquainted with



*By the courtesy of*

*Messrs. Davidson & Co.,*

**SIROCCO ENCLOSED TYPE SINGLE TEA PACKER**

them is to patiently and continually study the teas in liquor.

Dooars teas are generally thick and heavy in the cup, and although in some instances may be described as strong, yet they cannot be called pungent, in the sense of the term as applied to Assams; Sylhets to a slight extent are similar to Cachars, and it is sometimes practically impossible in a mixed batch, especially of

low priced kinds, to say which teas were grown in Sylhet and which came from Cachar. Sylhets are, as a rule, better teas than Cachar, being fuller and more "sappy." The varieties of Ceylon are not known by name as in India. High grown Ceylons are light and flavoured in cup and the "nose" of the dry leaf is unique and beautiful. Different gardens have their own peculiar means of recognition, but it is only possible by actual tasting to learn the effects of soil and elevation upon the products of the Island. As to China tea, the number of distinct kinds is likely to cause consternation to the beginner, but if a few are tasted it will no doubt be sufficient for practical purposes. Taking first the "Black Leafs" or Monings, we have—

Kintuck	Ningchow
Keemun	Oonfaa
Ichang	Kutoan

Kintuck and Keemun are brother and sister, while Ichang has a flavour of its own, a cross between Ningchow and Keemun. Low quality black leaf teas are described as "Moning," but because a tea is called Moning it does not necessarily follow that the quality is poor. A fine Ichang or Kintuck may be marked on the package by the China man as Moning. It is simply a general term used to denote Black Leaf teas.

Kaisows or "Red Leafs" chiefly comprise—

Panyong	Saryune
Ching Wo	Padrae
Seumoo	Pecco Congou

The amount of Kaisow consumed in the United Kingdom is not large, the Panyongs, Ching Wos and Pecco Congous being too light in liquor, but it is instructive

to taste a Panyong with a Ningchow or Keemun and note the difference.

There is also a China tea which used to be most popular years ago, in fact, many critical judges of the present day insist upon drinking what is known as *Lapsang Souchong*. There is a peculiar flavour associated with this growth, which may be described as "tarry," or as some crudely designate it, "ropey." The appearance of the leaf is as a rule rough and irregular, but the aroma obtained by smelling it is particularly attractive.

Certain parts of the United Kingdom, and those engaged in the Ships Stores trade, are partial to a China tea, which is always exported in twenty or twenty-one pound boxes. It is known as *Paklin*. The leaf in this instance has its own distinguishing features, being small and even, and of a deep black colour. Although Paklins are sometimes employed to drink without blending with other growths, yet a Kintuck or pure Moning is the more desirable.

Another tea usually packed in twenty-pound boxes is known by the strange name of "New Make," but during recent years this class of China tea has not been imported except in very small quantities.

A most important tea which is not appreciated as it should be is "Oolong." When once this tea from Formosa has been tasted, it is difficult to forget the delightfully suggestive flavour of peaches, or the subtle hint of the fragrant presence of Azaleas.

In America Oolongs meet with considerable favour, and are consumed in large quantities, but in England they are used in small proportions in order to add flavour to a blend. As a rule, one-twentieth is sufficient to give a unique tone to a mixture. In addition to the foregoing, samples of fancy teas should also be obtained, the appearance of the leaf being especially



*By the courtesy of*

## **SORTING TEA**

*The Indian Tea Association.*

noted. Fancy and Green teas, except for export trade, are now very sparingly used, but a knowledge of them is useful. The following are the most important—

Caper	Scented Orange Pekoe
Gunpowder	Young Hyson

Capers have a small granulated leaf, the colour being dark green, many consequently are known as Olive Capers. The liquor is light and pungent and the better qualities have a refreshing scent. Gunpowders and Young Hysons are known as Green teas, but Caper, although the leaf is Olive, does not come under this category. Scented Orange Pekoes comprise three varieties, viz.—

Macao	Canton
Foochow	

The two former are somewhat alike in appearance and liquor, but the Canton Scented Pekoe is totally different. The leaf is long and black and is called "Long Leaf Scented Orange Pekoe" or "Spider Leaf Pekoe."

The fancy and Green teas mentioned are grown and manufactured in China, but there is a considerable quantity of Green tea also made in Ceylon and India. The reported production of Indian Green tea for the year 1922 was 4,465,302 pounds. A small proportion reaches the London market, while a large quantity is exported direct to Russia and other countries. Indians and Ceylon Green Fannings are useful teas, and although the consumption in the United Kingdom is not large, compared with other grades, yet it is steadily increasing in favour for blending purposes.

The most important teas have now been enumerated, and if samples of each kind have received patient and critical study, it may be assumed that one is in possession of sufficient knowledge to enable him to recognise



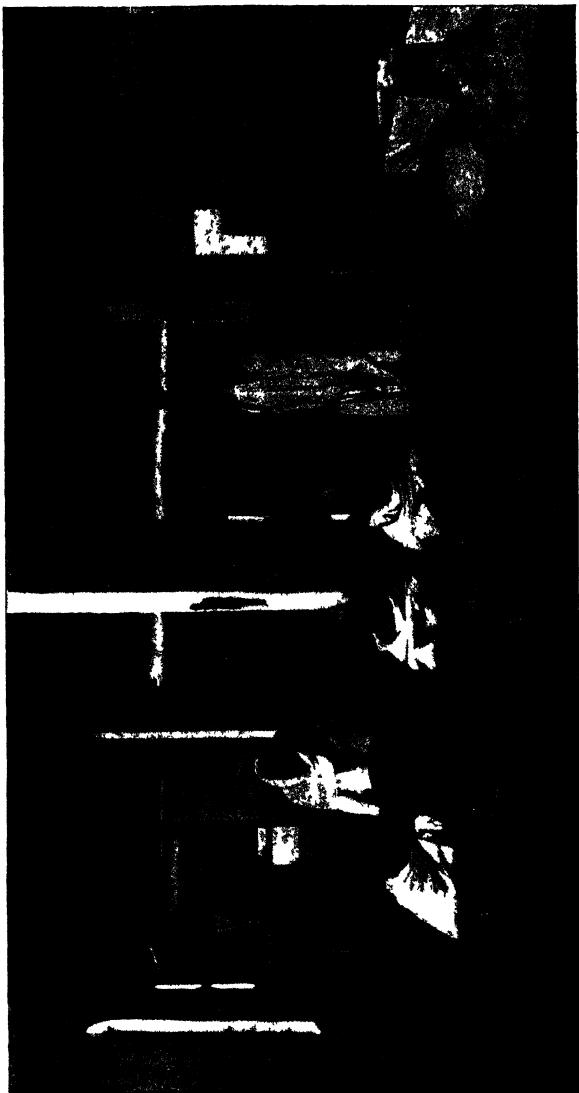
each growth by the dry leaf or by the liquor. After a few trials, it will not be difficult to classify Ceylons or Assams and other teas in a mixed batch, but to be able to put a value on them will mark distinct progress. To estimate prices with any degree of certainty is no easy task for the average grocer; in fact even the experienced taster is not always infallible. By persevering and making comparative tests a very fair idea of values will eventually be obtained. The principal object to be kept in view is, that the best result at a given price, has to be produced, consequently the value of each tea, which will eventually become part of the blend, will be entirely gauged by its usefulness for that purpose. To illustrate this truth, assume a selection of teas ranging in price say from 1s. 6d. to 1s. 10d. is under consideration. It may be better to buy one at 1s. 10d., although the leaf is inferior to another at 1s. 6d.; while, on the other hand, by using one part of a thin tea at 1s. 8d. and one part of a thick liquoring kind at 1s. 10d. a result equal to buying at 1s. 10d. may be obtained at a saving of 1d. per lb.

Surprise is often expressed that particular teas fetch higher prices than on the face of it are justified. The reason is not far to seek. Certain teas find favour in particular districts; consequently outside these districts the same teas are not appreciated to an equal extent. This is exemplified in the case of certain "Curly-leaf Pekoes." They are handsome in appearance, but the liquor is not in proportion to the style; notwithstanding the light cup they are very popular for shipping purposes, and as a consequence fetch high prices. Another example may be quoted. A few years ago, Indian Dusts gradually rose in price until they became almost prohibitive for the home trade. This was brought about by the fact that in the manufacture

of brick tea in the East, Indian Dusts were found to be indispensable, the natural result followed and the market advanced. At the present time, however, this grade of tea is more reasonable in price.

The following practical tests are very useful in helping one to decide as to the comparative value of teas under review. After the batch has been critically tasted and notes made on each sample, allow the teas to cool. It will be noticed that some will very soon become cloudy, appearing as if a small quantity of milk had been added. All the teas will "cream down" to an extent, unless the quality is very low, but what has to be carefully noted is which has the most creamy appearance. This test is a very reliable one for quality, but is not necessarily evidence that flavour is present. Another very useful and safe test can be made by adding a small quantity of milk. Care must be taken to give an equal proportion to each cup, otherwise the result will be of no value in deciding which tea "takes the milk" best. The usual course is to equalise the amount of liquor in each cup, and then with a small spoon—a salt spoon will do—add the same quantity of milk. It will be apparent that the better teas look more creamy than those of inferior quality. Except for particular purposes, it is as a rule dangerous to select tea which when the milk is added, appears dull and muddy. The majority of tea drinkers always take milk with their tea, and if the liquor looks as if cream had been used, it appeals to the eye and is more appreciated in consequence.

A very important factor to be taken into account in preparing an attractive blend, is the size and appearance of the leaf. The usual way of making tea in many houses is for the housewife to measure with a teaspoon the requisite quantity, following a fixed rule of her own as to the amount necessary to make a pot of tea. No



*Mr. Fritz Kapp*

## SORTING TEA

*By kind permission of*

consideration will be given to the significance of the leaf and the same amount will be used whether the leaf is small or large. It will be, therefore, quite obvious that the resulting cup will vary considerably, according to the class of tea employed. Tea drinkers, as a rule, like the liquor coloury and strong, and therefore the object to keep in view is the selection of an even and not too large leaf, so that when measured by the usual domestic standard the heaviest weight possible will be used. Great care, however, must be exercised in mixing, that dust or very small tea is not too much in evidence, otherwise the result will to an extent be spoiled by the leaves finding their way into the cup. In Ireland, especially, a great quantity of fine liquoring Fannings, Broken Pekoes, and Broken Orange Pekoes, is used, and as a consequence the blends are much smaller in leaf than the English people would be willing to buy. The general appearance of the blend must also be considered, and, unfortunately, too much attention has sometimes to be given to this matter. In some parts of the United Kingdom the grocer will only buy tea that has a good appearance, and very often an inferior liquoring kind will be purchased simply because the leaf is tippy and attractive.

The selection of a tea depends to a great extent upon the ultimate purpose for which it will be required. In the poorer districts, where economy has to be studied, the leaf should be well twisted, not too flat or open. The reason for this is, that the teapot is often filled twice, and sometimes even oftener, and a tea that is well made and tightly twisted does not part with all its properties during the first brew. As a contrast, an open leaf, or flaky tea, should be chosen when catering for a coffee-house trade, so that a good infusion is extracted immediately the hot water is added. Many

grocers have built up a valuable business by selling a pure "self-drinking" Ceylon or Assam dust. The liquor from one of fine quality will often compare most favourably with a leafy tea costing pence per pound more money. To test this assertion, prepare a batch of fine Broken Pekoes, including one or two dusts from a garden which produces good quality tea. When brewed, carefully drain each cup, and if necessary decant the liquor into clean cups which have been warmed by rinsing out with hot water, so that any grains of leaf may be eliminated. Mix all the teas and attempt to separate the dusts from the Broken Pekoes. The result may be surprising to the taster!

The casual buyer of tea often has difficulty in following the trend of the market unless he is able to constantly and regularly taste the produce of the most important countries. A reliable source of information, however, will be found in the weekly market reports issued by many of the large tea houses. Such statements of fact are useful, in that various grades are quoted from time to time, and the intelligent student is often able to choose the psychological moment when to add to his stock. Mere quotations help little. As an example—such statements as "Assam Pekoes sold at 1s. 9d., Low Pekoe Souchongs at 1s. 7d., Fine Orange Pekoes at 2s. 6d. to 5s. 6d."—convey little useful information. Assam Pekoes may have dropped  $\frac{1}{2}$ d. per pound during the week, but the quality of the Pekoes may also have fallen in the same proportion. The buyer cannot do better than to seek the help of any reputable tea house—his and their interests are identical, and any advice will be given with the commendable object of increasing sales. The large operator in tea as a rule studies assiduously another guide which is most important. The law of supply and demand is universal, and it is often possible



*By the courtesy of*

*Leptons, Ltd*

AN AERIAL ROPEWAY, TRANSPORTING  
FRESHLY PICKED LEAVES

by studying the Board of Trade returns dealing with the Imports, Exports, Delivery and Stock of Tea, to forecast with some degree of certainty the direction the market is likely to take.

A blend suitable for general purposes is, as a rule, composed of Ceylon and Indian, the proportion of each kind varying according to the state of the market and time of the year. At certain periods Indians are scarce, and consequently difficult to use freely, but, fortunately, Ceylons sometimes come to the rescue and a larger proportion can be used with advantage. During the summer months it has been found that consumers prefer a lighter beverage than when the weather is cold. In such cases the Ceylon flavour may safely predominate. Certain Ceylon and Indian teas will be found to "take the milk" satisfactorily, without mixing them with other growths. Such are known as "self-drinking teas" and if carefully selected will prove most useful, as they can be retailed direct from the chest without further manipulation. It is sometimes possible to prepare a blend, having all the characteristics of a perfect mixture from one or two teas; on the other hand, it may be necessary to use several lots before a full, rich, and bright liquor is obtained; whichever course is adopted, it will be useful to keep standards of all component parts, so that when the blend has to be matched, each tea may be followed as closely as possible. A record of each mixing should be entered in a book set apart for that purpose, giving details of the tea used, cost prices, etc.

It has already been pointed out that the public resent any alteration in the tea they have become accustomed to, and therefore it is essential that each mixture should follow on without any sudden or great change in style and flavour.

## CHAPTER X

### BLENDING, PACKING AND STORING

THE following scheme will to an extent help to maintain a continuity of character. Divide every mixture into, say, eight equal parts, numbering each consecutively. Whatever number of teas are used still follow the same plan. As an example, assume a blend consisting of three distinct Indians and one Ceylon has been decided upon, the cost price respectively of the Indians being 1s. 8½d., 1s. 10d., and 1s. 9¾d., and of the Ceylon 2s. 0d. After experimenting, it may be found that the best result is obtained by using one part of each tea. In such a case, proceed as follows—

			s	d.	
Number	1.	Indian, cost	1	8½	
	„	2. „ „	1	10	
	„	3. „ „	1	9¾	
	„	4. Ceylons „	2	0	Average cost a trifle over 1s. 10d.
	„	5. Indian „	1	8½	
	„	6. „ „	1	10	
	„	7. „ „	1	9¾	
	„	8. Ceylons „	2	0	

When the mixture gets low, it will be necessary to prepare another, but it may be found that the stock of one or more of the component parts has in the meantime been exhausted. Set out details of the blend as before, appropriating the same teas as far as possible. It will now be essential to fill up the gaps from stock. Take standards of the lots sold and carefully match them from teas available. For example—



			s.	d.		
Number	1.	Indian, cost	1	8½		
"	2.	"	"	1 10	<i>sold.</i>	To be matched.
"	3.	"	"	1 9¾		
"	4.	Ceylons	"	2 0		
"	5.	Indian	"	1 8½		
"	6.	"	"	1 10	<i>sold.</i>	To be matched.
"	7.	"	"	1 9¾		
"	8.	Ceylons	"	2 0		

To find an exact follow for the Indian at 1s. 10d. may present difficulties, but it may be found that by using one costing 1s. 9d., to fill No. 2 and another costing 1s. 11d. to complete No. 8, a satisfactory result can be obtained at the same cost. *The main idea is to guard against all the component teas running out at the same time.* Rather interlace the alterations at intervals. The examples given above illustrate the method when a blend is composed of only a few teas, but, of course, the same scheme is carried out when every lot is different. Should a difficulty arise in matching one of the parcels, do the same as in the above example where the Indian No. 2 and 6 was cleared up. By this means, the number of teas would be increased to nine, but the original basis of eight would still be adhered to, *e.g.*, Here we have a blend composed of eight teas one of which is sold.

			s	d		
Number	1.	Indian, cost	1	8½		
"	2.	"	"	1 10		
"	3.	"	"	1 9¾		
"	4.	Ceylon	"	2 0		
"	5.	"	"	1 9		
"	6.	Darjeeling	2	3		
"	7.	Indian	"	1 7½	<i>sold.</i>	To be matched.
"	8.	Ceylon	"	1 10½		

No. 7 now has to be followed, but from teas in stock a better result happens to be found by using *two* Indians costing 1s. 6d. and 1s. 8d. and  $\frac{1}{2}$ d. saved into the bargain. No. 7 would now be set out as follows—

$$7 \left\{ \begin{array}{l} \frac{1}{2} \text{ part Indian, costing } 1 \text{ } \overset{s.}{6} \overset{d.}{6} \\ \frac{1}{2} \text{ " " " " } 1 \text{ } 8 \end{array} \right\} \text{ averaging 1s. 7d.}$$

If a total mixture of 160 pounds has been decided upon, 20 pounds of each lot 1 to 8 will be taken with the exception of No. 7, when

$$\begin{array}{l} 10 \text{ pounds of Indian, costing } 1 \text{ } \overset{s.}{6} \overset{d.}{6} \text{ and} \\ 10 \text{ " " " " " " } 1 \text{ } 8 \end{array}$$

will be used instead of 20 pounds of one kind.

The mistake is sometimes made of using a blend to the last leaf. There are objections to this course. In the first place, the remnant being at the bottom of the bin is likely to be dusty, and not a fair representation of the original blend. Secondly, it is possible that the few pounds left have "gone off" to a certain extent, and will taste flat and unattractive. To remove these disadvantages always prepare a fresh mixture some time before it is required, so that the remnant of the antecedent blend may be added to the new. By this means, flat or dusty tea will not be sold, and no customers annoyed and lost. It has been found that a mixture is somewhat improved if it is not used immediately it is prepared. To allow some time to elapse appears to affect the teas so that they become, so to speak, united, and so form a perfect blend.

The aim should be to turn out a tea which is a blend and not simply a mixture of different kinds. The various teas used should be selected with this object



*By kind permission of*

## WEIGHING TEA

*Mr. Fritz Kapp*

in view, so that they will eventually merge into a complete whole. At the same time, an important point must not be lost sight of, and that is to produce something distinctive, so that it will differ in a marked degree from the tasteless, strong, and characterless mixtures now so largely in evidence. In the old days, a grocer was in the habit of stocking flavouring teas, such as Oolong, Scented Orange Pekoes, Caper, etc., so that he might be in a position to blend and sell a tea with an individuality, but times have unfortunately altered to the detriment of the trade.

As to storing, precautions must be taken to prevent contamination. If tea is placed in the proximity of other commodities, or if it is allowed to become damp, it is extraordinary how easily it will become tainted and spoilt. A space should be boarded off from the rest of the store-rooms so that it can be used exclusively as a tea room, and a similar preventive measure taken to keep the tea from taking up foreign flavours. All bins and chests should always be kept covered up, and no tea should be left exposed to the air. In the tea room, should be kept the various scales, scoops, etc., used in manipulating, so that their use may be confined entirely to the various operations.

Everyone has his own particular way of mixing, some adhering to the old-fashioned but reliable method of blending the different teas on the floor, while others will prefer to invest in a tea mixer, and carry out the operation by machinery. Which-ever course is decided upon, it is important that the teas which are to compose the blend are not over-mixed. The appearance of the leaf is often spoilt in this way, as by turning the blending machine too many times, or by moving the tea on the floor more than is absolutely required, the bloom of the leaf is displaced, the result



*Mr. Fritz Kopp,*

## PACKING TEA

*By kind permission of*

being that the leaf is covered with a fine dust and the finished blend consequently looks dull and grey. A small cutting or milling machine will be found indispensable unless the quantity of tea dealt with is only small. It will be found that some Pekoes and Pekoe Souchongs have excellent liquors, especially those grown on bushes in the Assam district, but it will be impossible to use them freely, unless cut down to a smaller size. In selecting a large leaf Pekoe Souchong or Pekoe, such as described, it will be expedient before deciding to buy the parcel, to experiment with the leaf and ascertain if it "mills well" or not. By milling well it is understood that the leaf may be cut without forming too much broken or dusty tea. Some teas which have been highly fired are likely to be very brittle, consequently when passed through the cutting machine, the proportion of broken and dusty tea will be excessive, to the detriment of the blend. Small milling machines have only one roller, made to cut an average size, but if it is found by milling once the leaf is not small enough, it can be passed through the cutter again. This second operation will, as a rule, reduce the leaf to a usable size. A fine sieve is a utensil which can often be used to advantage. Should a blend unfortunately turn out dusty it is not a difficult matter to remedy this by using the sieve, and so separate the finest particles from the rest of the mixture. These can then be either sold as dust or added to one of the lower grade blends.

The demand during recent years has turned largely to packet tea, and although the trend of events is deplored by the majority of grocers, yet it would be short-sighted policy not to supply what the public asks for and gets. The single-shop grocer will hardly find it worth while to pack his own tea, although should he be desirous of doing so, moulds and hand-rammers,

made especially for the purpose, are procurable from dealers who stock such materials, and are easily used. The packet turned out, however, will not be as satisfactory as could be wished unless made by experienced hands. The large wholesale houses have moved with the times, and rapid strides made in order to meet the demands of present-day competition. From the time the chests are opened at the blending warehouse, to the time when the housewife receives her small packet, the tea is never touched by hand, and as the varied operations are done by electrical and other recently-invented machinery, the tea is blended, weighed, packed, and labelled at a fractional cost.

As the tea trade has become so specialized by the new forms of competition, it is absolutely necessary that the retailers who buy original tea and blend and pack it themselves, should thoroughly understand the business ; and no one can increase his trade under modern conditions unless he does so, or unless his trade is large enough to enable him to employ a thoroughly skilled manager. On the other hand, if his business is a small one he can only conduct a trade by buying tea already blended, or blended and packed from one of the larger wholesale houses, who make a study of the business, and have large resources enabling them to buy suitable varieties at a given moment and to hold them till they are wanted. The essence of success is continuity in quality, and only very large buyers can command this. Under the conditions spoken of there is not the slightest doubt that the grocers can regain their hold on the tea trade, and with the increase in consumption, sell more than they have ever done.

## CHAPTER XI

### HOW TO CREATE INTEREST IN FINER TEA

It has been previously mentioned that the home consumption now stands at about 9 lbs. per head, the actual amount being 9.15 for 1928, compared with 6.74 lbs. ten years before. Comparisons with other articles of food will prove that the grocer will be acting wisely if he pushes tea in preference to many other commodities. At the present time, the family grocer is not selling his share of tea, and he hardly realises what an important asset it may become to his business if vigorously pushed. For instance, if a quantity of tea at 3s. is sold, the profit made on the transaction will be about 16½ per cent., a result not to be despised. Yet notwithstanding this handsome return, a grocer will in many cases display in a prominent manner other articles upon which he will be fortunate if half the above profit is obtained. Many of those engaged in the retail trade have not grasped this important fact, and if traders would give the space to a display of tea which is now devoted to an ostentatious exhibition of articles which have a comparatively small consumption, a larger turnover with a proportionately increased profit would result. Provided a grocer gives good value, it is quite within the realms of possibility for him to build up a valuable and increasing trade which will bring in a regular and certain profit all the year round. This is partly due to the facilities given by the wholesale houses, who hold large stocks and so enable the retailer to



maintain a continuity in his blends, while, on the contrary, by selling articles of which the public only want a small quantity, the turnover is uncertain, and not necessarily progressive.

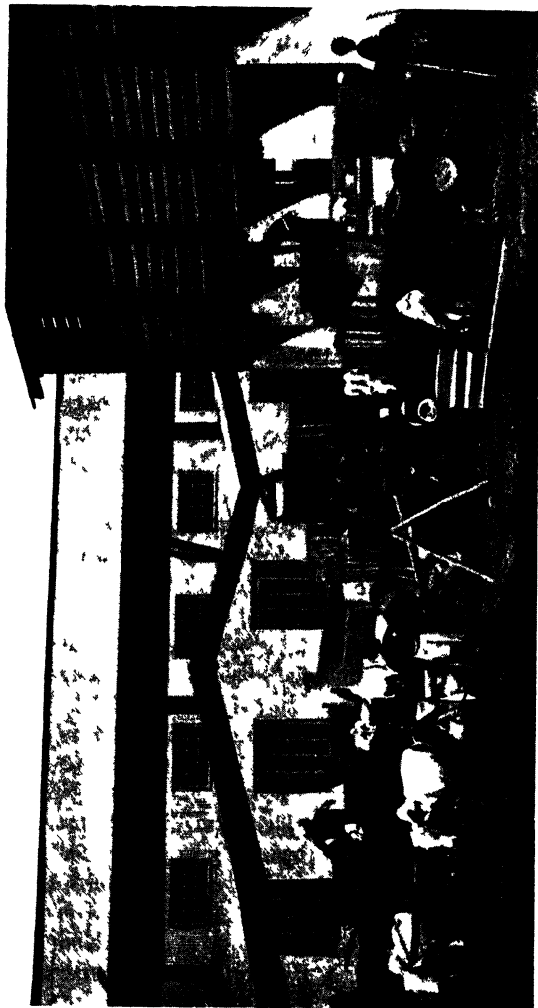
Window displays of tea always create interest, especially if some novelty is introduced, so as to attract attention. The public are lamentably ignorant about the tea they drink, and where it is possible to enlighten them, beneficial results are generally apparent. A good plan is to secure samples of fine tea sold in Mincing Lane, and place them in the window, clearly marking the prices paid for them. Many alluring and interesting curios from India and China are to be picked up from time to time, and these tastefully displayed will often create an interest in the grocer's magnet—tea.

Photographs, such as reproduced in this book, are educational as well as being most interesting, and if copies are tastefully framed and exhibited in a prominent position, interest will be awakened, and customers will be more ready to listen when appealed to on the subject of tea. A great deal is now being done to help the grocer to be up to date in his methods, and to persuade him to retail a high-class tea at a moderate and fair profit, bringing it before his customers by smart and telling local advertising, as well as his own ability as a salesman. When a certain standard of quality has been decided upon, let him at all hazards maintain it, and then by means of small samples prove to his customers that he can give them better tea for the same price than is offered by his more widely advertised rivals. Experience in recent years, when the tea trade has been most difficult to work satisfactorily, has proved that retailers who have adopted measures of an aggressive character, have not only maintained their business,

but have largely increased it. Others who have not troubled to understand an article of such large consumption, or have taken no steps to meet present day competition, have merely existed, incurring considerable risks without any compensating profit worth mentioning.

There has always been a tendency to press the lowest grades on the attention of the public, and as a result of lavish advertisements the demand has been to an extent diverted to the commoner sorts of tea. The tea-drinking public would be better served if it were educated to ask for the finest kinds, which are more satisfactory to buyer and seller. Fortunately, tea drinkers are taking a more intelligent interest in the question and are not satisfied with common tea, but look for and are willing to pay for the better kinds, and will not accept the statement that the finest teas can be obtained at prices much below the average obtained in public auction.

So that those with discrimination will be able to appreciate good tea, it is absolutely necessary that the difference between say teas at 2s. 4d. and 3s. should be so great in flavour and aroma as to appeal at once to the public taste; unless this difference is evident the attempt to educate and enlighten will be defeated, and harm instead of good will be done. Many have given up the struggle as hopeless, but this is only because they have not tried to fight, or have not done so in the proper way. A number of isolated attempts, and some on a large scale, have been made to promote the sale of fine tea, and there is every reason to know that these attacks have been most successful. It is, in fact, this success which has led to a more general movement amongst the family grocers of the Kingdom, which cannot fail to have the most remarkable results.



*By the courtesy of*

*The Indian Tea Association*

## DESPATCHING

It has long been said that if two cups of cocoa are consumed, the lavish advertisement concurrent for that commodity represents the cost of one cup. Tea is getting into a somewhat similar position. If the methods of publicity employed were directed to the stimulation of the demand for finer classes of tea, the public would benefit in the long run. Tea advertisement, as at present mainly carried on, however, only stimulates the demand for common sorts to the general loss. All the old epithets of the "fragrant leaf," the "cup that cheers," and so on, will have to be dropped if the present state of things continues, and some other names be applied to the brew offered to the public.

The public do not want blackness and bitterness, but should be able to appreciate *fragrance, flavour and aroma*. There are plenty of fine flavoured Indian, Ceylon and China growths prepared by the more skilled planters, which give what discriminating tea drinkers require.

Fine Darjeelings at prices up to 3s. 6d. and 5s. per lb. are relatively cheap at the money, for as tea is not a food but a stimulant, it is the pleasantness of the drink, and not its strength that ought to be studied. A pound of fine tea also *makes more cups* than a pound of common, while the difference in the cost on the three or four cups of tea drunk by an individual in the course of a day is almost incalculably small.

The following approximate estimate of the cost of a cup of tea at different retail prices is the result of actual experiment. There appear to be about 112 teaspoonfuls in a pound of tea, and one teaspoonful is taken to yield two cups up to the price of 2s. 6d., and two and a half cups above that price.



COOLIE HUTS, CEYLON

## COST OF ONE CUP OF TEA AT DIFFERENT RETAIL PRICES

Price per lb.			Cost of one Cup.		
s.	d.				
2	0	.	.	.	·107
2	4	.	.	.	·125
2	6	.	.	.	·133
} 224 cups to the lb					
2	8	.	.	.	·114
3	0	.	.	.	·128
3	6	.	.	.	·150
} 280 cups to the lb.					

The number of cups in a pound is taken as 224 up to 2s. 6d. and at 280 above that price. The cost is, of course, taken without milk and sugar.

## COST OF TWENTY CUPS OF TEA ON THE ABOVE BASIS

Price per lb.			Cost of 20 Cups.		
s.	d.				
2	0	.	.	.	2·14
2	4	.	.	.	2·50
2	6	.	.	.	2·66
} 224 cups to the lb.					
2	8	.	.	.	2·28
3	0	.	.	.	2·56
3	6	.	.	.	3·00
} 280 cups to the lb.					

Such differences in the cost of a cup of tea cannot be of importance to anyone directly he knows how trivial they are.

If an individual drinks three cups a day it would take him about ninety days to consume one pound, and, therefore, nearly three months to spend the extra cost of 8d. for 3s. as compared with 2s. 4d. tea. For an average family of five persons, it would cost less than a pound a year to drink the better tea. This is on the assumption that children drink as much tea as adults, which is, of course, not the case.

Cups of tea may be said to vary in size, and perhaps a more convincing test is to take the whole consumption of tea and divide it by the number of inhabitants in the Kingdom. The result is a trifle over 9 lbs. per head per annum, and taking 2s. 0d. retail as the price of fairly good ordinary tea, the actual extra cost in a whole year of drinking better teas would be as follows—

Retail price per lb.		Extra charge per lb. as compared with 2s. 0d.				Extra cost to the consumer in 12 months.	
s.	d.	s.	d.			s.	d.
2	4	.	.	.	0 4	.	3 0
2	8	.	.	.	0 8	.	6 0
3	0	.	.	.	1 0	.	9 0

Many people appear to think that by putting a little more common tea in the pot a good cup is thereby ensured; instead of this, its commonness is only made more pronounced, and the *blackness and bitterness increased*. It is impossible to get flavour and quality in this manner, because they are non-existent. It is also too often forgotten that many more cups of palatable infusion can be made from the fine than from the common varieties. At 2s. 8d. and 3s. 6d. choice varieties of tea can be sold and to the most economical, or the poorer sections of the community, *a few shillings a year* can only be a trifle. If people would only calculate how many cups they can obtain out of a pound, the extra cost of the more refreshing sorts would be seen to bear no comparison with the greater pleasure obtained by the consumption of the latter.

That poverty is not a bar to the use of fine tea is to be seen in the West of Ireland, where everyone is struck

by the magnificent quality of what is sold. In the relatively better-off districts in Ireland also, very much finer tea is consumed than in similar parts of England and Scotland.



## CHAPTER XII

### FINE TEA SOLD AT MINCING LANE

WE have taken one absolute proof quite at a hazard, namely, the bonded prices fetched at the Indian public sales. As everyone who attends the auctions knows, there are constant sales of fine parcels at prices ranging from 3s. 6d. to 5s., and in the particulars given below it will be seen that as much as 6s. 1½d. was fetched. However, the following is the record of the bonded prices brought at the Indian sales, held on Wednesday, September 17th, 1924—

1,163 chests of about 120 lbs. each

				sold at	1s. 5½d.	to	1s. 6d.
3,001	„	„		sold from	1s. 6¼d.	„	1s. 6¾d.
5,976	„	„	„	„	1s. 7d.	„	1s. 10d.
1,892	„	„	„	„	1s. 10¼d.	„	2s.
605	„	„	„	„	2s. 0¼d.	„	2s. 2d.
558	„	„	„	„	2s. 2¼d.	„	2s. 4d.
1,227	„	„	„	„	2s. 4¼d.	„	3s.
179	„	„	„	„	3s. 0¼d.	„	3s. 6d.
150	„	„	„	„	3s. 6¼d.	„	4s.
129	„	„	„	„	4s. 0¼d.	„	5s. 4d.
51	„	„	„	„	5s. 10½d.	„	6s. 1½d.

To these prices the duty of 3½d. per pound wholesale and all profits and expenses have to be added. Of the sale of nearly 15,000 chests about 27 per cent. was sold at 1s. 6¾d. and under, while 73 per cent. represents the good to finest growths, of which only a very minute proportion could be retailed at 2s. per pound.

The statement that the finest tea can be retailed at the lowest prices is, in fact, grotesquely opposed to the facts. Nevertheless, it does an infinity of harm.

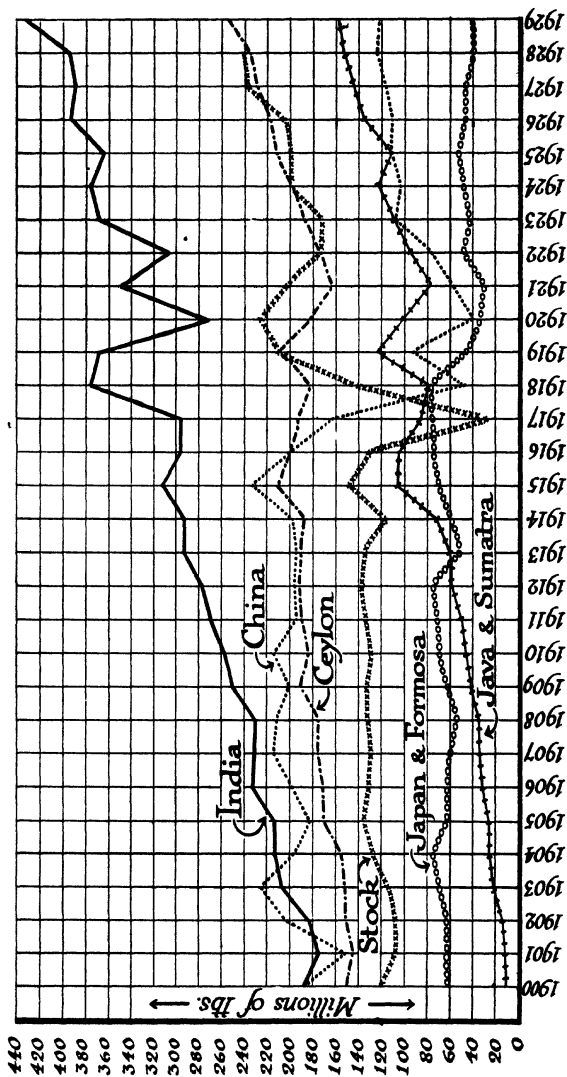
It degrades the trade by exalting commonness and putting down quality. It prevents any pride being taken in his trade by the distributor, and renders the sale of fine tea very difficult, either for wholesale or retail dealers. Of course, in a similar way the skilled planter on good soil in India and Ceylon, who picks and cures carefully, reaps no adequate reward for his labour, as all tea more and more approximates to one price, and it becomes easier in the long run to go in for quantity and to pay no attention to quality.

To obtain the comfort of fine tea the public must have confidence in *the family grocers*, for many have the skill and knowledge necessary for selecting a commodity requiring taste and judgment, while they have access to the best markets and can maintain the necessary standards of quality. They can prove to the public that if pleasure be wanted, it is to be found in fine and not in common tea, and that economy lies not in a very trivial annual money saving, but in buying those choice varieties, which give the real refreshment that is wanted in these strenuous times.

As we have said, however, the first essential to success is to sell really fine tea, with distinctive flavours, at the highest prices. Those who have not a full practical knowledge of tea-tasting and blending can rely upon the assistance of the wholesale houses and of the travellers and agents who so ably represent them, and who are as much interested in the elevation of the tea trade as the grocers themselves.

Finally, the grocers have to remember that tea is now a highly competitive commodity, to be sold on its merits and at a rate of profit in proportion to its quality. The percentage yielded by a tea at 3s. must be much the same as on a 2s. tea, but the return per pound would at the same time be proportionately better.

CHART SHOWING EXPORTS FROM VARIOUS COUNTRIES AND TOTAL STOCKS IN BOND  
ON DECEMBER 31ST.



# INDEX

ADULTERATION, 18  
Analysis of tea, 17

BANCHA tea, 31  
Black tea, 25, 28-9  
Blending, 89-100  
Bourbon tea, 61  
Brick tea, 9, 56-7  
British-grown tea, 8  
Broken Pekoes, 90  
Bushman tea, 62

CAUCASUS, tea in the, 47-9  
Ceylon tea, 11, 15, 35-9,  
51-2  
Chackra tea, 49  
China tea, 8-15; varieties,  
84  
Chinese methods of cultiva-  
tion, 22-31  
Cost of tea, 109, 112-14  
Customs authorities and tea,  
21

DARJEELING tea, 107  
Debasement of tea, 105  
Dust, 55

FAHAM tea, 61  
Fiji tea, 49  
Finer teas, 107, 112-14

GREEN tea, 6, 28, 29, 31,  
39, 53; varieties, 85, 87  
Grocers and tea, 74-6, 78-94,  
103-6  
"Gunpowder," 55  
Gyokuro tea, 30, 32, 35

HICACHA tea, 31, 35  
"Hyson No 1," 55  
"— No. 2," 55

INDIAN dusts, 88  
— tea, 7, 11, 40-6, varie-  
ties, 82

JAMAICA tea, 49  
Japanese tea, 31-35  
Java tea, 50

"LIE" tea, 18-20  
Linnæus, 1

NATAL tea, 46-7

OOLONG tea, 31, 75  
Orange Pekoes, 55, 87

PACKING, 101-2  
Paraguay tea, 59-61  
Pekoes, 52-5

SENCHA tea, 31, 33  
Storing, 99

TABLET tea, 56-8  
Tasting tea, 69-70, 74  
Taxation of tea, 63-5  
Tea, consumption of, in  
Australasia, Canada, Ger-  
many, Holland, United  
Kingdom, U.S.A., 15, Eng-  
land 15, 16  
Tea plant, the, 1  
„ sales, 70-2  
„ tests of, 89  
Theine, 17

UJI tea-gardens, 32

YENCHA, 31  
"Young Hyson" 55  
"Youpon," 59, 60



# A SELECTION FROM THE LIST OF COMMERCIAL HANDBOOKS

PUBLISHED BY  
SIR ISAAC PITMAN & SONS, LTD.

The following Catalogues will be sent post free on application: COMMERCIAL, EDUCATIONAL, TECHNICAL, SHORTHAND, FOREIGN LANGUAGES, and ART.

*Obtainable through any Bookseller or direct from the Publishers*

LONDON: PARKER STREET, KINGSWAY, W.C.2  
BATH: The Pitman Press. MELBOURNE: The Rialto, Collins Street.  
NEW YORK: 2 West 45th Street. TORONTO: 70 Bond Street.  
INDIA: A. H. Wheeler & Co., Hornby Road, Bombay; 11 Clive Street, Calcutta; and 15 Elgin Road, Allahabad.

*The Prices contained in this List apply only to Great Britain.*

## CONTENTS

	PAGE		PAGE
ADVERTISING AND COMMERCIAL ART . . . . .	21	FOREIGN LANGUAGES . . . . .	28-29
ARITHMETIC, ETC. . . . .	2	GEOGRAPHY AND HISTORY . . . . .	9
BANKING AND FINANCE . . . . .	11-12	INCOME TAX . . . . .	15
BOOK-KEEPING AND ACCOUNTANCY . . . . .	3-5	INDUSTRIAL ADMINISTRATION . . . . .	17-18
BUSINESS ORGANIZATION AND MANAGEMENT . . . . .	18-19	INSURANCE . . . . .	13-14
CAREERS, ETC. . . . .	6	LAW . . . . .	24-25
CIVIL SERVICE . . . . .	6	MUNICIPAL WORK . . . . .	20
COMMERCE, ETC. . . . .	7	REFERENCE BOOKS . . . . .	26-27
COMMON COMMODITIES AND INDUSTRIES . . . . .	31-32	SALESMANSHIP . . . . .	22
ECONOMICS. . . . .	10	SECRETARIAL WORK . . . . .	16
ENGLISH AND COMMERCIAL CORRESPONDENCE . . . . .	8	SHIPPING . . . . .	15
		SHORTHAND . . . . .	29
		TRANSPORT . . . . .	23
		TYPEWRITING . . . . .	30

## ARITHMETIC, ETC.

	PRICE
<b>Arithmetic and Book-keeping</b>	
By THOS. BROWN, F.S.S., and VINCENT E. COLLINGE, A.C.I.S. In two parts. Part I . . . . . Net	2/6
Part II . . . . . Net	1/3
<b>Arithmetic Class Book</b>	
By W. R. BARHAM . . . . .	2/6
<b>Arithmetic of Commerce</b>	
By P. W. NORRIS, M.A., B.Sc. (Hons.) . . . . . Net	4/-
<b>Business Calculations</b>	
By F. HEELIS, F.C.I.S. . . . .	2/-
<b>Commercial Invoicing</b>	
By MAX M. KAY . . . . . Net	1/6
<b>Commercial Mathematics</b>	
By L. H. L. DAVIES, B.A., and E. G. H. HABAKKUK . . . . .	5/-
<b>Complete Commercial Arithmetic</b> . . . . .	3/-
Answers . . . . . Net	1/6
<b>Complete Mercantile Arithmetic</b>	
By H. P. GREEN, F.C.Sp.T. (With Key) . . . . . Net	6/-
<b>Counting-House Mathematics</b>	
By H. W. PORRITT and W. NICKLIN, A.S.A.A. . . . . Net	2/-
<b>Elements of Commercial Arithmetic</b>	
By THOMAS BROWN . . . . . Net	2/-
<b>Logarithms Simplified</b>	
By ERNEST CARD, B.Sc., and A. C. PARKINSON, A.C.P. . . . . Net	2/6
<b>Principles and Practice of Commercial Arithmetic</b>	
By P. W. NORRIS, M.A., B.Sc. . . . . Net	7/6
<b>Rapid Methods in Arithmetic</b>	
By JOHN JOHNSTON. Revised and Edited by G. K. BUCKNALL, A.C.I.S. . . . . Net	1/-
<b>Slide Rule Applied to Commercial Calcula- tions, The</b>	
By R. M. SHIREBY . . . . . Net	2/6
<b>Smaller Commercial Arithmetic</b>	
By C. W. CROOK, B.A., B.Sc. . . . . Net	2/-

## BOOK-KEEPING AND ACCOUNTANCY

	PRICE
<b>Accountancy</b>	
By F. W. PIXLEY, F.C.A., <i>Barrister-at-Law</i> . . . . .	Net 7/6
<b>Accountants' Dictionary</b>	
Edited by F. W. PIXLEY, F.C.A. In 2 Vols. . . . .	Net 63/-
<b>Accounting</b>	
By S. S. DAWSON, M.Com., F.C.A., and R. C. DE ZOUCHE, F.C.A. . . . .	Net 10/6
<b>Accounts of Executors, Administrators, and Trustees</b>	
By WILLIAM B. PHILLIPS, F.C.A., A.C.I.S. . . . .	Net 5/-
<b>Advanced Accounts</b>	
Edited by ROGER N. CARTER, M.Com., F.C.A. . . . .	Net 7/6
<b>Key to Advanced Accounts</b>	
By R. A. GOODMAN . . . . .	20/-
<b>Advanced Book-keeping Exercises for Commercial Schools</b>	
By A. J. FAVELL, B.Sc.(Econ.), A.C.I.S. . . . .	2/6
<b>Apportionment in Relation to Trust Accounts</b>	
By A. F. CHICK, <i>Incorporated Accountant</i> . . . . .	Net 6/-
<b>Auditing, Accounting, and Banking</b>	
By F. DOWLER, A.C.A., and E. M. HARRIS, A.I.B. . . . .	Net 7/6
<b>Auditors : Their Duties and Responsibilities</b>	
By F. W. PIXLEY, F.C.A. . . . .	Net 21/-
<b>Audit Programmes</b>	
By E. E. SPICER, F.C.A., and E. C. PEGLER, F.C.A. . . . .	Net 4/6
<b>Balance Sheets, Business</b>	
By F. R. STEAD . . . . .	Net 10/6
<b>Book-keeper's Vade Mecum, The</b>	
By S. HOWARD WITHEY, F.C.I., A.L.A.A. . . . .	Net 3/6
<b>Book-keeping, A Course in</b>	
By R. W. HOLLAND, O.B.E., M.A., M.Sc., LL.D. . . . .	Net 4/-
<b>Book-keeping and Accounts</b>	
By E. E. SPICER, F.C.A., and E. C. PEGLER, F.C.A. . . . .	Net 20/-
<b>Book-keeping and Office Work</b>	
By R. J. PORTERS, F.C.R.A. Two Vols. . . . .	Net 30/-
<b>Book-keeping for Beginners</b>	
By W. E. HOOPER, A.C.I.S. . . . .	Net 2/-



## Book-keeping and Accountancy—contd.

	PRICE
<b>Book-keeping for Retailers</b>	
By H. W. PORRITT and W. NICKLIN, A.S.A.A. . . . .	Net 2/-
<b>Book-keeping for Shopkeepers</b>	
By J. GREIG, F.C.I. . . . .	Net 2/6
<b>Book-keeping, Modern Methods of</b>	
By R. H. EPPS, <i>Chartered Accountant</i> . . . . .	Net 4/-
<b>Book-keeping Teachers' Manual</b>	
By C. H. KIRTON, A.C.I.S. . . . .	Net 7/6
<b>Branch Accounts</b>	
By P. TAGGART, A.S.A.A. . . . .	Net 3/-
<b>Builders' Accounts and Costs</b>	
By ROBERT G. LEGGE . . . . .	Net 3/6
<b>Business Book-keeping</b>	
By J. ROUTLEY . . . . .	Net 3/6
<b>Commercial Goodwill</b>	
By P. D. LEAKE, F.C.A. . . . .	Net 21/-
<b>Company Accounts</b>	
By ARTHUR COLES. Revised by W. C. WOOD, A.C.I.S. . . . .	Net 7/6
<b>Consignments, Account Sales, and Accounts</b>	
<b>Current</b>	
By E. J. HAMMOND, A.C.I.S., A.L.A.A. . . . .	Net 5/-
<b>Cost Accounting</b>	
By W. B. LAWRENCE, C.P.A. . . . .	Net 21/-
<b>Cost Accounts in Principle and Practice</b>	
By A. CLIFFORD RIDGWAY, F.C.A. . . . .	Net 5/-
<b>Cost Accounts for the Metal Industry</b>	
By H. E. PARKES, M.Com., A.C.W.A. . . . .	Net 10/6
<b>Costing and Price Fixing</b>	
By J. M. SCOTT MAXWELL, B.Sc., F.C.W.A. . . . .	Net 6/-
<b>Costing, A Primer of</b>	
By R. J. H. RYALL . . . . .	Net 5/-
<b>Costing, Dictionary of</b>	
By R. J. H. RYALL . . . . .	Net 10/6
<b>Costing, Theory and Practice of</b>	
By E. W. NEWMAN, F.C.A. . . . .	Net 8/6
<b>Costs for Manufacturers</b>	
By C. SMITH . . . . .	Net 5/-
<b>Depreciation and Wasting Assets</b>	
By P. D. LEAKE, F.C.A. . . . .	Net 15/-
<b>Dictionary of Book-keeping</b>	
By R. J. PORTERS, F.C.R.A. . . . .	Net 7/6

## Book-keeping and Accountancy—contd.

	PRICE
<b>Estimating</b>	
By T. H. HARGRAVE . . . . . Net	7/6
<b>Examination Notebook for Accountant Students, An</b>	
By E. E. SPICER, F.C.A., and E. C. PEGLER, F.C.A. Net	4/6
<b>Executorship Accounts</b>	
By C. TOWNSEND . . . . . Net	5/-
<b>Foreign Exchange Accounting</b>	
By C. DJORÖP . . . . . Net	15/-
<b>Full Course in Book-keeping</b>	
By H. W. PORRITT and W. NICKLIN, A.S.A.A. Net	5/-
<b>Graded Book-keeping Exercises for Commercial Schools</b>	
By A. J. FAVELL, B.Sc., A.C.I.S. . . . .	2/-
<b>Higher Book-keeping and Accounts</b>	
By H. W. PORRITT and W. NICKLIN, A.S.A.A. Net	5/-
<b>Holding Companies</b>	
By A. J. SIMONS, A.C.A. (Hons.) . . . . Net	10/6
<b>Hotel Book-keeping</b> . . . . . Net	2/6
<b>Manual of Cost Accounts</b>	
By H. JULIUS LUNT, F.C.A., F.C.I.S., F.C.W.A. Net	7/6
<b>Notes of Lessons on Book-keeping</b>	
By J. ROUTLEY . . . . . Net	3/6
<b>Practical Auditing</b>	
By E. E. SPICER, F.C.A., and E. C. PEGLER, F.C.A. Net	21/-
<b>Principles of Accounts</b>	
By J. STEPHENSON, M.A., M.Com., D.Sc. Part I, 3/6 . . . . . Part II	5/-
<b>Principles of Auditing</b>	
By F. R. M. DE PAULA, O.B.E., F.C.A. . . Net	7/6
<b>Principles of Book-keeping Explained</b>	
By I. H. HUMPHRYS . . . . . Net	2/6
<b>Questions and Answers in Book-keeping and Accounting.</b> By F. F. CHARLES, F.S.A.A. . Net	10/6
<b>Charles's Elementary Book-keeping</b>	
By F. F. CHARLES, F.S.A.A., F.C.I.S. . . . .	3/6
<b>Shopkeepers' Accounts Simplified</b>	
By C. D. CORNELL . . . . . Net	2/-
<b>Sinking Funds, Reserve Funds, and Depreciation.</b> By J. H. BURTON, A.S.A.A. . . Net	3/6

## CAREERS, ETC.

	PRICE
<b>Authorship and Journalism</b>	
By ALBERT E. BULL . . . . . Net	3/6
<b>Banking as a Career</b>	
By F. A. WILLMAN, Cert. A.I.B. . . . . Net	3/6
<b>Game of Commerce, The</b>	
By HERBERT KENDRICK . . . . . Net	3/6
<b>How to Become an Auctioneer and Estate Agent</b>	
By W. F. NOKES, F.A.T. . . . . Net	3/6
<b>How to Become a Company Secretary</b>	
By E. J. HAMMOND, A.C.I.S. . . . . Net	3/6
<b>How to Become a Private Secretary</b>	
By J. E. MCLACHLAN, F.I.P.S. (Hons.) . . . . Net	3/6
<b>How to Become a Qualified Accountant</b>	
By R. A. WITTY, F.S.A.A. . . . . Net	3/6
<b>How to Choose Your Career</b>	
By W. LESLIE IVEY, M.C. . . . . Net	3/6
<b>How to Secure a Good Job</b>	
By W. LESLIE IVEY, M.C. . . . . Net	3/6

## CIVIL SERVICE

<b>Civil Service Arithmetic Tests</b>	
By P. J. VARLEY-TIPTON . . . . . Net	2/6
<b>Civil Service Essay Writing</b>	
By W. J. ADDIS, M.A. . . . . Net	2/6
<b>Civil Service Guide</b>	
By A. J. LAWFORD JONES . . . . . Net	2/6
<b>Civil Service Practice in Précis Writing</b>	
Edited by ARTHUR REYNOLDS, M.A. (Oxon) . . . . Net	2/6
<b>Copying Manuscript, Orthography, Hand-writing, etc.</b>	
By A. J. LAWFORD JONES . . . . . Net	3/6
<b>Elementary Précis Writing</b>	
By WALTER SHAWCROSS, B.A. . . . . Net	2/-
<b>Guide to Indexing and Précis Writing</b>	
By W. J. WESTON, M.A., B.Sc., and E. BOWKER . . . . Net	2/-
<b>Indexing and Précis Writing</b>	
By A. J. LAWFORD JONES . . . . . Net	2/6

## COMMERCE, ETC.

	PRICE
<b>Commerce for Commercial and Secondary Schools</b>	
By A. J. FAVELL, B.Sc.(Econ.), A.C.I.S. . . . .	3/6
<b>Commerce, Stage I</b>	
By A. JAMES, F.F.T.Com., F.R.Econ.S. . . . .	2/6
<b>Commercial Handwriting and Correspondence</b> . . . . .	Net 2/6
<b>Commercial Practice</b>	
By ALFRED SCHOFIELD, B.Sc. (Econ.) . . . . .	Net 3/6
<b>Elements of Commerce</b>	
By F. HEYWOOD, A.C.I.S. . . . .	Net 4/-
<b>How to Study for Examinations</b>	
By D. COOPER . . . . .	2/-
<b>Manual of Business Training</b> . . . . .	Net 4/-
<b>Modern Business and Its Methods</b>	
By W. CAMPBELL, <i>Chartered Secretary</i> . . . . .	Net 7/6
<b>Popular Guide to Journalism</b>	
By A. KINGSTON . . . . .	Net 2/6
<b>Practical Journalism and Newspaper Law</b>	
By A. BAKER, M.J.I., and E. A. COPE . . . . .	Net 3/6
<b>Principles and Practice of Commerce</b>	
By JAMES STEPHENSON, M.A., M.Com., D.Sc. . . . .	Net 8/6
<b>Principles of Business</b>	
By JAMES STEPHENSON, M.A., M.Com., D.Sc. Part I, Net 2/6 ; . . . . . Part II, Net	3/6
<b>Questions and Answers on Business Practice</b>	
By E. J. HAMMOND, A.C.I.S., A.L.A.A. . . . .	Net 5/-
<b>Routine of Commerce</b>	
By ALFRED SCHOFIELD, B.Sc.(Econ.) . . . . .	Net 4/-
<b>Short Story Writing and Free Lance Journalism</b>	
By SYDNEY A. MOSELEY . . . . .	Net 7/6
<b>Theory and Practice of Commerce</b>	
Edited by F. HEELIS, F.C.I.S. . . . .	Net 7/6
<b>Traders and Trading</b>	
By W. J. WESTON, M.A., B.Sc. . . . .	Net 2/6
<b>Wholesale and Retail Trade</b>	
By W. CAMPBELL . . . . .	Net 5/-

# ENGLISH AND COMMERCIAL

## CORRESPONDENCE

	PRICE
<b>Business Letters in English</b>	
By W. J. WESTON, M.A., B.Sc. . . . . Net	3/6
<b>Commerce and Correspondence</b>	
By E. H. GROUT, B.Sc.(Econ.) . . . . . Net	5/-
<b>Commercial Correspondence and Commercial English</b>	
. . . . . Net	3/6
<b>Commercial Dictionary.</b> . . . . . Net	1/6
<b>Correspondence of Commerce, The</b>	
By A. RUSDON PALMER, B.Sc., B.A. . . . . Net	4/-
<b>Dictionary of Correct English, A</b>	
By M. A. PINK, M.A. . . . . . Net	2/6
<b>English and Commercial Correspondence</b>	
By H. NAGAOKA and D. THEOPHILUS, B.A. . . . .	3/6
<b>English Composition and Business Correspondence</b>	
By J. F. DAVIS, D.Lit., M.A., LL.B. (Lond.) . . . . . Net	2/-
<b>English Exercises. A Book of Homonyms</b>	
By B. S. BARRETT . . . . .	3/6
<b>English for Commercial Students</b>	
By H. W. HOUGHTON . . . . . . Net	2/6
<b>English Grammar and Composition</b>	
By W. J. WESTON, M.A., B.Sc. (Lond.) . . . . . Net	4/6
<b>English Mercantile Correspondence</b> . . . . . Net	3/6
<b>Guide to Commercial Correspondence</b>	
By W. J. WESTON, M.A., B.Sc. (Lond.) . . . . .	2/6
<b>How to Teach Commercial English</b>	
By WALTER SHAWCROSS, B.A. . . . . . Net	3/6
<b>Manual of Commercial English</b>	
By WALTER SHAWCROSS, B.A. . . . . . Net	3/6
<b>Manual of Punctuation.</b> By W. D. WEBSTER . . . . .	1/-
<b>New Era Spelling Manual</b>	
By H. J. BOWER . . . . . . . . . .	2/6
<b>Pocket English Dictionary</b> . . . . . Net	1/6
<b>Principles and Practice of Commercial Correspondence.</b> By J. STEPHENSON, M.A., M.Com. Net	7/6
<b>Punctuation as a Means of Expression</b>	
By A. E. LOVELL, M.A. . . . . . Net	1/-
<b>Synonyms and Antonyms, Pitman's Book of</b>	
Net	2/6

## GEOGRAPHY AND HISTORY

	PRICE
<b>Commercial Atlas of the World</b> . . . Net	5/-
<b>Commercial Geography of the British Empire Abroad and Foreign Countries</b> . . . Net	3/-
<b>Commercial Geography of the British Isles</b> . . . . . Net	2/6
<b>Commercial Geography of the World</b> . . . Net	4/6
<b>Commercial History</b> By J. R. V. MARCHANT, M.A. . . . . Net	5/6
<b>Economic Geography</b> By John MCFARLANE, M.A., M.Com. . . . . Net	10/6
<b>Economic Geography, The Principles of</b> By R. N. RUDMOSE BROWN . . . . . Net	7/6
<b>Economic Resources of the Empire</b> Edited by T. WORSWICK, O.B.E., M.Sc. . . . . Net	5/-
<b>Elements of Commercial Geography</b> By C. H. GRANT, M.Sc., F.R.Met.Soc. . . . . Net	2/-
<b>Elements of Commercial History</b> By FRED HALL, M.A., B.Com., F.C.I.S. . . . . Net	2/-
<b>Geography of Commerce, The</b> By W. P. RUTTER, M.Com. . . . . Net	5/-
<b>History of Commerce, The</b> By T. G. WILLIAMS, M.A., F.R.Hist.S., F.R.Econ.S. . . . . Net	5/-
<b>Main Currents of Social and Industrial Change, 1870-1924</b> By T. G. WILLIAMS, M.A. . . . . Net	5/-
<b>Outlines of the Economic History of England</b> By H. O. MEREDITH, M.A., M.Com. . . . . Net	7/6
<b>Principles of Commercial History</b> By J. STEPHENSON, M.A., M.Com., D.Sc. . . . . Net	7/6
<b>Rise of British Commerce, The</b> By K. G. LEWIS, B.A., and N. BRANTON . . . . .	3/6
<b>Statistical Atlas of the World, A</b> By J. STEPHENSON, M.A., M.Com., D.Sc. . . . . Net	7/6

## ECONOMICS

	PRICE
<b>Dictionary of Economic and Banking Terms</b> By W. J. WESTON, M.A., B.Sc., and A. CREW . . . . .	Net 5/-
<b>Economics Educator</b> Edited by J. H. JONES, M.A. Three Vols. . . . .	Net 63/-
<b>Economics for Business Men</b> By W. J. WESTON, M.A., B.Sc. . . . .	Net 3/6
<b>Economics for Everyman</b> By J. E. LE ROSSIGNOL . . . . .	Net 5/-
<b>Economics of Private Enterprise, The</b> By J. H. JONES, M.A. . . . .	Net 7/6
<b>Economics of Instalment Trading and Hire Purchase.</b> By W. F. CRICK . . . . .	Net 5/-
<b>Economics of the Manufacturing Business</b> By W. A. STEWART JONES, F.C.W.A., F.S.S. . . . .	3/6
<b>Economics : Principles and Problems</b> By L. D. EDIE . . . . .	Net 15/-
<b>Elements of Political Economy</b> By H. HALL, B.A. . . . .	Net 2/-
<b>Exercises in Economics</b> By A. PLUMMER, M.Sc. (Econ.), M.A., LL.D. . . . .	Net 2/-
<b>Guide to Political Economy</b> By F. H. SPENCER, D.Sc., LL.B. . . . .	Net 3/6
<b>Industrial Combination in England</b> By P. FITZGERALD, D.Sc.(Econ.) . . . . .	Net 10/6
<b>Introduction to Business Economics</b> By J. STEPHENSON, M.A., M.Com., D.Sc. . . . .	3/6
<b>Outlines of Central Government</b> By JOHN J. CLARKE, M.A., F.S.S. . . . .	Net 5/-
<b>Outlines of Industrial and Social Economics</b> By JOHN J. CLARKE, M.A., F.S.S., and JAMES E. PRATT, A.C.I.S. . . . .	Net 1/6
<b>Outlines of Local Government of the United Kingdom (and the Irish Free State)</b> By JOHN J. CLARKE, M.A., F.S.S. . . . .	Net 5/-
<b>Plain Economics</b> By JOHN LEE, M.A., M.Com.Sc. . . . .	Net 3/6
<b>Road to Plenty, The</b> By W. T. FOSTER and W. CATCHINGS . . . . .	Net 3/6
<b>Substance of Economics, The</b> By H. A. SILVERMAN, B.A. (Econ.) . . . . .	Net 6/-

## BANKING AND FINANCE

PAGES

### Answers to Questions Set at the Examinations of the Institute of Bankers

By L. L. M. MINTY, Ph.D., B.Sc., Econ., B.Com.—		
Foreign Exchange. Part I & Part II	Each	Net 3/6
Economics. Part I & Part II	Each	Net 5/-
English Grammar and Composition. Part I	Net	3/6
" " " " Part II	Net	5/-
<b>Banker as a Lender, The</b>		
By F. E. STEELE	Net	5/-
<b>Bankers' Advances</b>		
By F. R. STEAD. Edited by SIR JOHN PAGET, K.C.	Net	6/-
<b>Bankers' Advances Against Produce</b>		
By A. WILLIAMS, A.I.B.	Net	6/-
<b>Bankers and the Property Statutes of 1925 and 1926.</b>		
By R. W. JONES	Net	6/-
<b>Bankers' Credits</b>		
By W. F. SPALDING	Net	10/6
<b>Bankers' Securities Against Advances</b>		
By LAWRENCE A. FOGG, Cert. A.I.B.	Net	6/-
<b>Bankers' Clearing House, The</b>		
By P. W. MATTHEWS	Net	7/6
<b>Bankers' Tests</b>		
By F. R. STEAD	Net	10/6
<b>Bank Organization, Management, etc.</b>		
By J. F. DAVIS, M.A., D.Lit., LL.B. (Lond.)	Net	6/-
<b>Bills of Exchange Act, 1882, The</b>		
By M. H. MEGRAH, B.Com.	Net	6/-
<b>Bills of Exchange Acts, A Practical Examination of the</b>		
By C. H. FENNELL	Net	7/6
<b>Cheques.</b>		
By C. F. HANNAFORD	Net	6/-
<b>Dictionary of Banking</b>		
By W. THOMSON and LLOYD CHRISTIAN	Net	30/-
<b>Dictionary of Banking Terms in Three Languages, (English-French-German)</b>		
By L. HERENDI	Net	21/-
<b>Dictionary of the World's Currencies and Foreign Exchanges</b>		
By W. F. SPALDING	Net	30/-
<b>Eastern Exchange, Currency, and Finance</b>		
By W. F. SPALDING	Net	15/-



## Banking and Finance—contd.

	PRIOR
<b>Elements of Banking</b>	
By J. P. GANDY . . . . .	Net 2/-
<b>English Banking Administration, An Outline of</b>	
By JOSEPH SYKES, B.A. (Hons.) . . . .	Net 2/6
<b>English Banking Methods</b>	
By L. L. M. MINTY, Ph.D., B.Sc., B.Com. .	Net 15/-
<b>English Composition and Banking Corre- spondence</b>	
By L. E. W. O. FULLBROOK-LEGGATT, M.C., B.A.	Net 5/-
<b>Foreign Banking Systems</b>	
Edited by H. PARKER WILLIS and B. H. BECKHART	Net 21/-
<b>Foreign Exchange and Foreign Bills in Theory and in Practice.</b> By W. F. SPALDING .	Net 7/6
<b>Foreign Exchange, A Primer of</b>	
By W. F. SPALDING . . . . .	Net 3/6
<b>Foreign Exchanges, Arithmetic and Practice of the.</b> By A. G. SUGG, Cert. A.I.B. . .	Net 3/6
<b>Foreign Trade, The Finance of</b>	
By W. F. SPALDING . . . . .	Net 7/6
<b>Functions of Money, The</b>	
By W. F. SPALDING . . . . .	Net 7/6
<b>How to Succeed in a Bank</b>	
By F. F. STEELE . . . . .	Net 3/6
<b>London Money Market, The</b>	
By W. F. SPALDING . . . . .	Net 10/6
<b>Money, Exchange, and Banking</b>	
By H. T. EASTON, A.I.B. . . . .	Net 6/-
<b>Notes on Banking and Commercial Law</b>	
By T. LLOYD DAVIES . . . . .	Net 3/-
<b>Practical Banking</b>	
By J. F. G. BAGSHAW, Cert. A.I.B. . .	Net 7/6
<b>Talks on Banking to Bank Clerks</b>	
By H. E. EVANS . . . . .	Net 2/6
<b>Theory and Practice of Finance, The</b>	
By W. COLLIN BROOKS . . . . .	Net 10/6
<b>Title Deeds Old and New</b>	
By FRANCIS R. STEAD. . . . .	Net 5/-

## INSURANCE

	PRICE
<b>Actuarial Science, The Elements of</b> By R. E. UNDERWOOD, M.B.E., F.I.A. . . . Net	5/-
<b>Average Clauses and Fire-Loss Apportionments.</b> By E. H. MINNION, F.C.I.I. . . . Net	8/6
<b>Building Construction, Plan Drawing, and Surveying in Relation to Fire Insurance</b> By D. W. WOOD, M.B.E. . . . . Net	6/-
<b>Burglary Risks</b> By E. H. GROUT, B.Sc., A.C.I.I. . . . . Net	10/6
<b>Business Man's Guide to Insurance, The</b> By A. PHILPOTT . . . . . Net	3/6
<b>Casualty Insurance</b> By C. J. CROBAUGH, M.A., and A. E. REDDING, B.S. Net	25/-
<b>Compound Interest, Principles of</b> By H. H. EDWARDS . . . . . Net	5/-
<b>Credit Risks, Commercial.</b> By G. H. SWAIN Net	5/-
<b>Dictionary of Accident Insurance</b> Edited by J. B. WELSON, LL.M., F.C.I.I., F.C.I.S. Net	60/-
<b>Fire Extinguishment and Fire Alarm Systems</b> By R. NORTHWOOD . . . . . Net	7/6
<b>Fire Insurance, Common Hazards of</b> By W. G. KUBLER RIDLEY, F.C.I.I. . . . Net	5/-
<b>Fire Insurance, Dictionary of</b> Edited by B. C. REMINGTON, F.C.I.I. . . . Net	30/-
<b>Fire Insurance, Principles and Practice of</b> By F. GODWIN . . . . . Net	5/-
<b>Fire Insurance, The Law of</b> By J. ROWLATT, B.A. . . . . Net	7/6
<b>Fire Policy Drafting and Endorsements</b> By W. C. H. DARLEY . . . . . Net	7/9
<b>Fire Waste.</b> By G. E. KEAY . . . . . Net	2/6
<b>Guide to Marine Insurance</b> By HENRY KEATE . . . . . Net	3/6
<b>Insurance</b> By T. E. YOUNG, B.A., F.I.A., F.R.A.S. . . . Net	10/6
<b>Insurance Office Organization and Routine</b> By J. B. WELSON, LL.M., F.C.I.I., F.C.I.S., and F. H. SHERRIFF, F.I.A. . . . . Net	7/6
<b>Insurance of Profits.</b> By A. G. MACKEN . . . Net	5/-

## Insurance—contd.

	PRICE
<b>Insurance of Public Liability Risks</b>	
By S. V. KIRKPATRICK, F.C.I.I. . . . . Net	5/-
<b>Law and Practice as to Fidelity Guarantees</b>	
By C. EVANS and F. H. JONES . . . . . Net	6/-
<b>Law of Accident and Contingency Insurance</b>	
By F. H. JONES . . . . . Net	7/6
<b>Life Assurance from Proposal to Policy</b>	
By H. HOSKING TAYLOR, F.I.A., A.C.I.I., and V. W. TYLER, F.I.A. . . . . Net	6/-
<b>Life Assurance, Guide to</b>	
By S. G. LEIGH, F.I.A. . . . . Net	5/-
<b>Marine Insurance of Goods, The</b>	
By F. W. S. POOLE . . . . . Net	15/-
<b>Motor Insurance.</b> By W. F. TODD . . . . . Net	6/-
<b>Pension and Superannuation Funds, Their Formation and Administration Explained</b>	
By BERNARD ROBERTSON, F.I.A., and H. SAMUELS . . . . . Net	5/-
<b>Pension, Endowment, Life Assurance, and Other Schemes for Commercial Companies</b>	
By H. DOUGHARTY, F.C.I.I. . . . . Net	6/-
<b>Personal Accident, Disease, and Sickness Insurance, The Principles and Practice of</b>	
By J. B. WELSON, LL.M. . . . . Net	5/-
<b>Physiology and Anatomy</b>	
By H. GARDINER, M.S., F.R.C.S. . . . . Net	10/6
<b>Principles and Practice of Accident Insurance, The</b>	
By G. E. BANFIELD, A.C.I.I. . . . . Net	6/-
<b>Principles of Insurance</b>	
By J. ALFRED EKE . . . . . Net	5/-
<b>Successful Insurance Agent, The</b>	
By J. J. BISGOOD, B.A., F.C.I.S., J.P. . . . . Net	2/6
<b>Talks on Insurance Law</b>	
By J. A. WATSON, B.Sc., LL.B. . . . . Net	3/6
<b>Workmen's Compensation Insurance</b>	
By C. E. GOLDING, LL.D., F.C.I.I., F.S.S. . . . . Net	5/-

## SHIPPING

	PRICE
<b>Case and Freight Costs</b>	
By A. W. E. CROSFIELD . . . . . Net	2/-
<b>Exporters' Handbook and Glossary, The</b>	
By F. M. DUDENEY . . . . . Net	7/6
<b>How to Export Goods.</b> By F. M. DUDENEY . . . . . Net	2/-
<b>How to Import Goods.</b> By J. A. DUNNAGE . . . . . Net	2/-
<b>Import and Export Trade.</b> By A. S. HARVEY . . . . . Net	21/-
<b>Importer's Handbook, The.</b> By J. A. DUNNAGE . . . . . Net	10/6
<b>Manual of Exporting</b>	
By J. A. DUNNAGE, F.S.S., F.C.I., A.M.Inst.T. . . . . Net	10/6
<b>Shipbroking, Introduction to</b>	
By C. D. MACMURRAY and M. M. CREE . . . . . Net	3/6
<b>Shipping.</b> By A. HALL and F. HEYWOOD . . . . . Net	2/-
<b>Shipping and Shipbroking</b>	
By C. D. MACMURRAY and M. M. CREE . . . . . Net	15/-
<b>Shipping Business Methods</b>	
By R. B. PAUL . . . . . Net	5/-
<b>Shipping Finance and Accounts</b>	
By R. B. PAUL . . . . . Net	2/6
<b>Shipping Office Organization, Management, and Accounts.</b> By ALFRED CALVERT . . . . . Net	6/-
<b>Shipping Terms and Phrases</b>	
By J. A. DUNNAGE . . . . . Net	2/6

## INCOME TAX

<b>Income Tax and Super-Tax</b>	
By E. E. SPICER and E. C. PEGLER . . . . . Net	12/6
<b>Income Tax, Snelling's Practical</b>	
By C. W. CHIVERS . . . . . Net	3/6
<b>Income Tax Relief, Double</b>	
By H. E. SEED and A. W. RAWLINSON . . . . . Net	10/6
<b>Income Tax Reliefs</b>	
By A. W. RAWLINSON, A.C.A. . . . . Net	20/-
<b>Income Tax, Super-Tax, and Surtax</b>	
<b>The New Law Explained</b>	
By V. WALTON, F.C.A., F.R.S., F.R.Econ.S. . . . . Net	7/6

## SECRETARIAL WORK, ETC.

	PRICE
<b>Chairman's Manual</b>	
By GURDON PALIN, and ERNEST MARTIN, F.C.I.S.	Net 5/-
<b>Company Registrar's Manual, The</b>	
By J. J. QUINLIVAN . . . . .	Net 10/6
<b>Company Secretarial Work</b>	
By E. MARTIN, F.C.I.S. . . . .	Net 2/-
<b>Company Secretary's Vade Mecum</b>	
Edited by P. TOVEY, F.C.I.S. Revised by C. W. ADAMS, A.C.I.S. . . . .	Net 3/6
<b>Dictionary of Secretarial Law and Practice</b>	
Edited by PHILIP TOVEY, F.C.I.S. . . . .	Net 42/-
<b>Examination Notes on Secretarial Practice</b>	
By C. W. ADAMS, A.C.I.S. . . . .	Net 2/6
<b>Formation and Management of a Private Company</b>	
By F. D. HEAD, B.A. . . . .	Net 7/6
<b>Guide for the Company Secretary</b>	
By ARTHUR COLES. . . . .	Net 6/-
<b>Guide to Company Secretarial Work</b>	
By O. OLDHAM, A.C.I.S. Revised by G. K. BUCKNELL, A.C.I.S. (Hons.) . . . . .	Net 3/6
<b>Honorary Secretaryship</b>	
By W. B. THORNE . . . . .	Net 2/6
<b>How to Take Minutes</b>	
Edited by E. MARTIN, F.C.I.S. . . . .	Net 2/6
<b>Meetings</b>	
By F. D. HEAD, B.A. . . . .	Net 5/-
<b>Outlines of Transfer Procedure in Connection with Stocks, Shares, etc.</b>	
By F. D. HEAD, B.A. (Oxon), <i>Barrister-at-Law</i> . . . . .	Net 3/6
<b>Practical Share Transfer Work</b>	
By F. W. LIDDINGTON . . . . .	Net 3/6
<b>Prospectuses : How to Read and Understand Them</b>	
By PHILIP TOVEY, F.C.I.S. . . . .	Net 5/-
<b>Questions and Answers on Secretarial Practice</b>	
By E. J. HAMMOND. Revised by G. K. BUCKNELL, A.C.I.S. (Hons.) . . . . .	Net 7/6
<b>Secretary's Handbook</b>	
Edited by SIR H. E. BLAIN, C.B.E. . . . .	Net 5/-
<b>Transfer of Stocks, Shares, and Other Marketable Securities</b>	
By F. D. HEAD, B.A. . . . .	Net 10/6

# INDUSTRIAL ADMINISTRATION

	PRICE
<b>Dictionary of Industrial Administration</b>	
Edited by J. LEE, C.B.E., M.A., M.Com.Sc. Two Vols. . . . .	Net 63/-
<b>Employment Management</b>	
Compiled and Edited by DANIEL BLOOMFIELD . . . . .	Net 8/6
<b>Engineering Factory Supplies</b>	
By W. J. HISCOX . . . . .	Net 5/-
<b>Factory Administration in Practice</b>	
By W. J. HISCOX . . . . .	Net 8/6
<b>Factory Lay-Out, Planning and Progress</b>	
By W. J. HISCOX . . . . .	Net 7/6
<b>Factory Organization</b>	
By C. H. NORTHCOTT, M.A., Ph.D., O. SHELDON, B.A., J. W. WARDROPPER, B.Sc., B.Com., A.C.W.A., and L. URWICK, M.A. . . . .	Net 7/6
<b>Fair Wage, A</b> By E. BATTEN . . . . .	Net 2/6
<b>Industrial Conflict</b>	
By the RIGHT HON. GEORGE N. BARNES . . . . .	Net 3/6
<b>Industrial Control (Applied to Manufacture)</b>	
By F. M. LAWSON, A.M.I.C.E., A.M.I.Mech.E. . . . .	Net 8/6
<b>Industrial Organization</b>	
By JOHN LEE, C.B.E., M.A., M.Com.Sc. . . . .	Net 5/-
<b>Industrial Organization, The Evolution of</b>	
By B. F. SHIELDS, M.A. . . . .	Net 10/6
<b>Introduction to Industrial Administration, An</b>	
By J. LEE, C.B.E., M.A., M.Com.Sc. . . . .	Net 5/-
<b>Lectures on Industrial Administration</b>	
Edited by B. MUSCIO, M.A. . . . .	Net 6/-
<b>Letters to an Absentee Director</b>	
By JOHN LEE, C.B.E., M.A., M.Com.Sc. . . . .	Net 5/-
<b>Management</b>	
By J. LEE, C.B.E., M.A., M.Com.Sc. . . . .	Net 5/-
<b>Modern Industrial Movements</b>	
Edited by D. BLOOMFIELD . . . . .	Net 10/6
<b>New Leadership in Industry, The</b>	
By S. A. LEWISOHN . . . . .	Net 7/6
<b>Outlines of Industrial Administration</b>	
By R. O. HERFORD, H. T. HILDAGE, and H. G. JENKINS . . . . .	Net 6/-
<b>Patents for Inventions</b>	
By J. E. WALKER, B.A., and R. B. FOSTER, B.Sc. . . . .	Net 21/-

## Industrial Administration—contd.

	PRICE
<b>Philosophy of Management, The</b>	
By OLIVER SHELDON, B.A. . . . . Net	10/6
<b>Principles of Industrial Administration, An Introduction to</b>	
By A. P. M. FLEMING, C.B.E., M.Sc., M.I.E.E., and H. J. BROCKLEHURST, M.Eng., A.M.I.E.E. . . . . Net	3/6
<b>Principles of Industrial Welfare</b>	
By J. LEE, C.B.E., M.A., M.Com.Sc. . . . . Net	5/-
<b>Problems of Labour</b>	
Compiled and Edited by DANIEL BLOOMFIELD . . . . . Net	8/6
<b>Research in Industry</b>	
By A. P. M. FLEMING, C.B.E., M.Sc., M.I.E.E., and J. G. PEARCE, B.Sc., A.M.I.E.E. . . . . Net	10/6
<b>Sharing Profits With Employees</b>	
By J. A. BOWIE, M.A. . . . . Net	10/6
<b>Time Standardization of Workshop Operations</b>	
By T. PILKINGTON, M.I.Mech.E. . . . . Net	16/-
<b>Welfare Work in Industry</b>	
Edited by E. T. KELLY . . . . . Net	5/-
<b>Workshop Committees</b>	
By C. G. RENOLD . . . . . Net	1/-

## BUSINESS ORGANIZATION AND MANAGEMENT

<b>Business Management</b>	
By PERCIVAL WHITE . . . . . Net	15/-
<b>Business Management for Small Retailers</b>	
By H. W. THEEDAM . . . . . Net	3/6
<b>Clubs and Their Management</b>	
By F. W. PIXLEY . . . . . Net	10/6
<b>Colliery Office Organization and Accounts</b>	
By J. W. INNES, F.C.A., and T. C. CAMPBELL, F.C.I. . . . . Net	7/6
<b>Commercial Management</b>	
By C. L. BOLLING . . . . . Net	10/6
<b>Counting-House and Factory Organization</b>	
By J. GILMOUR WILLIAMSON . . . . . Net	7/6
<b>Drapery Business Organization, Management and Accounts.</b>	
By J. ERNEST BAYLEY . . . . . Net	7/6
<b>Filing Systems.</b>	
By E. A. COPE . . . . . Net	3/6

## Business Organization and Management—contd.

	PRICE
<b>Flour Milling Industry, Organization and Management of the.</b> By E. L. PEARSON. Net	12/6
<b>Grocery Business Organization and Management.</b> By C. L. T. BEECHING, O.B.E., and J. A. SMART . . . . . Net	6/-
<b>Hire-Purchase Trading</b> By CUNLIFFE L. BOLLING . . . . . Net	10/6
<b>Hotel Organization, Management, and Accountancy</b> By G. De BONI, Hotel Manager, and F. F. SHARLES, F.S.A.A., F.C.I.S. . . . . Net	10/6
<b>How to Manage a Private Hotel</b> By P. HOBBS . . . . . Net	3/6
<b>How to Organize Bazaars, Concerts, Fêtes, Exhibitions, etc.</b> By F. ATTFIELD FAWKES . . . . . Net	6/-
<b>Ironmongery and Ironmongers' Accounts</b> By S. W. FRANCIS . . . . . Net	3/6
<b>Office Machines, Appliances, and Methods</b> By W. DESBOROUGH, F.C.I. . . . . Net	6/-
<b>Office Organization and Management, Including Secretarial Work</b> By LAWRENCE R. DICKSEE, M.Com., F.C.A., and SIR H. E. BLAIN, C.B.E. . . . . Net	7/6
<b>Organization of a Small Business, The</b> By W. A. SMITH . . . . . Net	2/6
<b>Self-Organization for Business Men</b> By MORLEY DAINOW, B.Sc.(Hons.), Lond. . . . . Net	5/-
<b>Solicitor's Office Organization, Management, and Accounts</b> By E. A. COPE and H. W. H. ROBINS . . . . . Net	6/-
<b>Stockbroker's Office, The</b> By J. E. DAY . . . . . Net	7/6
<b>Stores Accounts and Stores Control</b> By J. H. BURTON . . . . . Net	5/-



## MUNICIPAL WORK

	PRICE
<b>Local Government of the United Kingdom, and the Irish Free State The</b>	
By J. J. CLARKE, M.A., F.S.S. . . . . Net	12/6
<b>Municipal Accounting Systems</b>	
By S. WHITEHEAD, A.S.A.A., A.C.I.S. . . . . Net	5/-
<b>Municipal Audit Programmes</b>	
By the same Author . . . . . Net	3/6
<b>Municipal Book-keeping</b>	
By J. H. MCCALL, F.S.A.A. . . . . Net	7/6
<b>Municipal and Local Government Law</b>	
By H. E. SMITH, LL.B. . . . . Net	10/6
<b>Municipal Organization</b>	
By M. H. COX, LL.B. . . . . Net	5/-
<b>Municipal Student's Examination Notebook</b>	
By S. WHITEHEAD, A.S.A.A., A.C.I.S. . . . . Net	7/6
<b>Municipal Series</b>	
Edited by WILLIAM BATESON, A.C.A., F.S.A.A. Describes the Organization and Administration in the Various Departments of a Municipality.	
<b>Principles of Organization</b>	
By W. BATESON, A.C.A., F.S.A.A. . . . . Net	3/6
<b>Education Department</b>	
By A. E. IKIN, B.Sc., LL.D. . . . . Net	7/6
<b>Electricity Undertaking</b>	
By C. L. E. STEWART, M.I.E.E. . . . . Net	6/-
<b>Finance Department</b>	
By W. BATESON, A.C.A., F.S.A.A. . . . . Net	7/6
<b>Gas Undertaking</b>	
By E. UPTON, F.S.A.A. . . . . Net	5/-
<b>Municipal Engineer and Surveyor's Department.</b>	
By E. J. ELFORD . . . . . Net	10/6
<b>Public Health Department</b>	
By W. A. LEONARD . . . . . Net	6/-
<b>Rating Department</b>	
By A. H. PEACOCK, M.A., A.S.A.A. . . . . Net	5/-
<b>Town Clerk's Department and the Justices' Clerk's Department</b>	
By A. S. WRIGHT and E. H. SINGLETON . . . . . Net	7/6
<b>Tramways Department</b>	
By S. B. N. MARSH . . . . . Net	6/-
<b>Waterworks Department</b>	
By F. J. ALBAN, F.S.A.A., F.I.M.T.A., A.C.I.S. . . . . Net	10/6

## ADVERTISING AND COMMERCIAL ART

	PRICE
<b>Advertisement Lay-Out and Copy-Writing</b>	
By A. J. WATKINS . . . . . Net	15/-
<b>Advertising Procedure</b> By O. KLEPPNER . . . . . Net	21/-
<b>Advertising Through the Press</b>	
By N. HUNTER . . . . . Net	5/-
<b>Advertising to Women</b>	
By C. A. NAETHER, M.A. . . . . Net	21/-
<b>Business Man's Guide to Advertising</b>	
By A. E. BULL . . . . . Net	3/6
<b>Craft of Silent Salesmanship</b>	
By C. MAXWELL TREGURTHA and J. W. FRINGS . . . . . Net	5/-
<b>Designs, Book of</b>	
By C. J. and L. S. STRONG . . . . . Net	16/-
<b>Effective Postal Publicity</b>	
By MAX RITTENBERG . . . . . Net	7/6
<b>Language of Advertising, The</b>	
By J. B. OPDYCKE . . . . . Net	15/-
<b>Letter and Design, Studio Handbook</b>	
By S. WELO . . . . . Net	12/6
<b>Lettering, Plain and Ornamental</b>	
By E. G. FOOKS . . . . . Net	3/6
<b>Modern Publicity.</b> By A. W. DEAN . . . . . Net	2/6
<b>Practical Points in Postal Publicity</b>	
By MAX RITTENBERG . . . . . Net	7/6
<b>Practical Press Publicity</b>	
By A. L. CULYER . . . . . Net	3/6
<b>Show Card Writing, The Art of</b>	
By L. J. and C. J. STRONG . . . . . Net	16/-
<b>Sign Painting.</b> By F. H. ATKINSON . . . . . Net	16/-
<b>Ticket and Showcard Designing</b>	
By F. A. PEARSON . . . . . Net	3/6
<b>Training in Commercial Art</b>	
By V. L. DANVERS . . . . . Net	21/-
<b>Types and Type Faces</b>	
Reprinted from "Modern Advertising"	
By C. M. TREGURTHA . . . . . Net	2/6

## SALESMANSHIP

	PRICE
<b>Building Retail Sales</b>	
By C. C. KNIGHTS . . . . . Net	5/-
<b>Commercial Travelling.</b> By A. E. BULL . . . . . Net	3/6
<b>Craft of Silent Salesmanship</b>	
By C. MAXWELL TREGURTHA and J. W. FRINGS . . . . . Net	5/-
<b>Mail Order and Instalment Trading</b>	
By A. E. BULL . . . . . Net	7/6
<b>Mail Order Organization</b>	
By P. E. WILSON . . . . . Net	3/6
<b>Modern Sales Correspondence</b>	
By D. M. WILSON . . . . . Net	5/-
<b>Outline of Sales Management, An</b>	
By C. C. KNIGHTS, <i>Sales Consultant</i> . . . . . Net	5/-
<b>Practical Aids to Retail Selling</b>	
By A. EDWARD HAMMOND . . . . . Net	7/6
<b>Practical Salesmanship</b>	
By N. C. FOWLER, Junr. . . . . Net	7/6
<b>Principles of Retailing</b>	
By N. A. BRISCO, Ph.D. . . . . Net	16/-
<b>Psychology as a Sales Factor</b>	
By A. J. GREENLY . . . . . Net	10/6
<b>Sales Management.</b> By C. L. BOLLING . . . . . Net	10/6
<b>Salesmanship</b>	
By W. A. CORBION and G. E. GRIMSDALE . . . . . Net	3/6
<b>Salesmanship, Technique of</b>	
By C. C. KNIGHTS . . . . . Net	5/-
<b>Shop Fittings and Display</b>	
By A. E. HAMMOND . . . . . Net	5/-
<b>Successful Retailing.</b> By E. N. SIMON . . . . . Net	5/-
<b>Training for More Sales</b>	
By C. C. KNIGHTS, <i>Sales Consultant</i> . . . . . Net	5/-
<b>Training for Travelling Salesmen</b>	
By F. W. SHRUBSALL . . . . . Net	2/6
<b>Window Dressing.</b> By G. L. THOMINS . . . . . Net	2/-

## TRANSPORT

	PRICE
<b>Canals and Inland Waterways</b>	
By GEORGE CADEBURY . . . . . Net	7/6
<b>Commercial Air Transport</b>	
By LIEUT.-COL. IVO EDWARDS, C.M.G., and F. TYMMS, M.C., A.F.R.Ae.S. . . . . Net	7/6
<b>History and Economics of Transport, The</b>	
By A. W. KIRKALDY, M.A., B.Litt., M.Com., and A. D. EVANS . . . . . Net	16/-
<b>How to Send Goods by Road, Rail, and Sea</b>	
By G. B. LISSENDEN . . . . . Net	2/-
<b>Industrial Traffic Management</b>	
By G. B. LISSENDEN . . . . . Net	25/-
<b>Modern Dock Operation</b>	
By D. ROSS-JOHNSON, O.B.E., V.D., M.Inst.I. . . Net	6/-
<b>Modern Railway Operation</b>	
By D. R. LAMB, M.Inst.T. . . . . Net	7/6
<b>Motor Road Transport.</b> By J. PHILLIMORE . . Net	10/6
<b>Port Economics</b>	
By B. CUNNINGHAM, D.Sc., B.E., F.R.S.E., M.Inst.C.E. . . . . Net	6/-
<b>Railway Electrification and Traffic Problems</b>	
By P. BURTT . . . . . Net	10/6
<b>Railway Rates : Principles and Problems</b>	
By P. BURTT, M.Inst.T. . . . . Net	6/-
<b>Railway Statistics : Their Compilation and Use.</b> By A. E. KIRKUS, O.B.E., M.Inst.T. . . Net	5/-
<b>Rights and Duties of Transport Undertakings</b>	
By H. B. DAVIES, M.A. . . . . Net	5/-
<b>Road Making and Road Using</b>	
By T. SALKFIELD, M.Inst.C.E., M.Inst.T. . . . Net	7/6
<b>Traders' Rail Charges Up to Date</b>	
By J. W. PARKER, A.M.Inst.T. . . . . Net	3/6

## LAW

	PRICE
<b>Bankruptcy, Deeds of Arrangement, etc.</b>	
By W. VALENTINE BALL, M.A., <i>Barrister-at-Law</i> . . . . .	Net 12/6
<b>Bills, Cheques, and Notes</b>	
By J. A. SLATER, B.A., LL.B. (Lond.) . . . . .	Net 6/-
<b>Business Tenant, The</b>	
By EDWARD S. COX-SINCLAIR, and T. HYNES, . . . . .	Net 7/6
<b>Commercial Law of England, The</b>	
By J. A. SLATER, B.A., LL.B. (Lond.) . . . . .	Net 3/6
<b>Companies and Company Law</b>	
By A. C. CONNELL, LL.B. (Lond.) . . . . .	Net 6/-
<b>Company Case Law</b>	
By F. D. HEAD, B.A. (Oxon) . . . . .	Net 7/6
<b>Company Law</b>	
By D. F. DE L'HOSTE RANKING, M.A., LL.D., and ERNEST EVAN SPICER, F.C.A. . . . .	Net 10/-
<b>Elements of Commercial Law, The</b>	
By A. H. DOUGLAS, LL.B. (Lond.) . . . . .	Net 2/-
<b>Elementary Law.</b> By E. A. COPE . . . . .	Net 4/-
<b>Examination Notes on Commercial Law</b>	
By R. W. HOLLAND, O.B.E., M.A., M.Sc., LL.D. . . . .	Net 2/6
<b>Examination Notes on Company Law</b>	
By R. W. HOLLAND, O.B.E., M.A., M.Sc., LL.D. . . . .	Net 2/6
<b>Executorship Law and Accounts</b>	
By D. F. DE L'HOSTE RANKING, M.A., LL.D., E. E. SPICER, F.C.A., and E. C. PEGLER, F.C.A. . . . .	Net 15/-
<b>Guide to Company Law</b>	
By R. W. HOLLAND, O.B.E., M.A., M.Sc. LL.D. . . . .	Net 3/6
<b>Guide to Railway Law</b>	
By ARTHUR E. CHAPMAN, M.A., LL.D. (Camb.) . . . . .	Net 7/6
<b>Introduction to Commercial Law</b>	
By NORMAN A. WEBB, B.Sc. . . . .	5/-
<b>Law for Journalists</b>	
By CHARLES PILLEY, <i>Barrister-at-Law</i> . . . . .	Net 5/-
<b>Law for the House-Owner</b>	
By A. H. COSWAY . . . . .	Net 2/6
<b>Law of Carriage by Railway, The. In Great Britain and Ireland</b>	
By L. R. LIPSETT, M.A., LL.D., and T. J. D. ATKINSON, M.A. . . . .	Net 50/-
<b>Law of Contract, The</b>	
By R. W. HOLLAND, O.B.E., M.A., M.Sc., LL.D. . . . .	Net 5/-

## Law—contd.

	PRICE
<b>Law of Master and Servant</b>	
By F. R. BATT, LL.M. . . . . Net	10/6
<b>Law Relating to Building and Contracts</b>	
By W. T. CRESWELL, <i>Barrister-at-Law</i> . . . . Net	12/6
<b>Law Relating to Secret Commissions and Bribes.</b>	
By ALBERT CREW, <i>Barrister-at-Law</i> . . . . Net	10/6
<b>Law Relating to Carriage by Land</b>	
By S. W. CLARKE, <i>Barrister-at-Law</i> . . . . Net	7/6
<b>Legal Terms, Phrases, and Abbreviations</b>	
By E. A. COPE . . . . . Net	3/-
<b>Mercantile Law</b>	
By J. A. SLATER, B.A., LL.B. (Lond.) Fifth Edition, Revised by R. W. HOLLAND, O.B.E., M.A., M.Sc., LL.D., of the <i>Middle Temple</i> . . . . . Net	7/6
<b>Outlines of Company Law</b>	
By F. D. HEAD, B.A. (Oxon) . . . . . Net	2/6
<b>Partnership Law and Accounts</b>	
By R. W. HOLLAND, O.B.E., M.A., M.Sc., LL.D. Net	6/-
<b>Principles of Marine Law</b>	
By LAWRENCE DUCKWORTH . . . . . Net	7/6
<b>Questions and Answers on Commercial Law</b>	
By R. W. HOLLAND, O.B.E., M.A., M.Sc., LL.D. Net	5/-
<b>Questions and Answers on Company Law</b>	
By G. WILLIAM FORTUNE, F.S.A.A., F.C.I.S. (Hons.), and D. R. MATHESON, M.A. (Hons.), A.S.A.A. (Hons.) Net	5/-
<b>Railway Act, 1921, The</b>	
By R. P. GRIFFITHS, F.C.I., F.B.E.A., Grad.Inst.T. Net	2/6
<b>Rights and Duties of Liquidators, Trustees, and Receivers, The</b>	
By D. F. DE L'HOSTE RANKING, M.A., LL.D., ERNEST E. SPICER, F.C.A., and ERNEST C. PEGLER, F.C.A. Net	15/-
<b>Solicitor's Clerk's Guide.</b>	
By E. A. COPE . . . . . Net	4/-
<b>Trusts : Law, Administration, and Accounts</b>	
By C. KELLY and J. COLE-HAMILTON . . . . Net	15/-
<b>Wills, Executors, and Trustees</b>	
By R. W. HOLLAND, O.B.E., M.A., M.Sc., LL.D. Net	2/6

## REFERENCE BOOKS

	PRICE
<b>Bedrock of Modern Business, The</b> By JAMES STEPHENSON, M.A., M.Com., D.Sc. . . . . Net	15/-
<b>Business Building</b> Edited by F. F. SHARLES, F.S.A.A., F.C.I.S. 2 Vols. Net	42/-
<b>Business Cycles. The Problem and Its Setting</b> By W. C. MITCHELL . . . . . Net	30/-
<b>Business Forecasting and Its Practical Application.</b> By W. WALLACE, M.Com. (Lond.) . . . . . Net	7/6
<b>Business Man's Encyclopaedia and Dictionary of Commerce</b> Edited by FRANK HEYWOOD, F.C.I.S. Two Vols. Net	47/6
<b>Business Man's Guide</b> Edited by J. A. SLATER, B.A., LL.B. . . . . Net	6/-
<b>Business Statistics</b> By R. W. HOLLAND, O.B.E., M.A., M.Sc., LL.D. Net	3/6
<b>Business Terms, Phrases, etc.</b> . . . . . Net	3/6
<b>Cable and Wireless Communications of the World, The</b> By F. J. BROWN, C.B., C.B.E., M.A., B.Sc. . . . . Net	7/6
<b>Charting, Manual of</b> . . . . . Net	6/-
<b>Charts and Graphs</b> By KARL G. KARSTEN, B.A. (Oxon) . . . . . Net	25/-
<b>Commercial Arbitrations</b> By E. J. PARRY, B.Sc., F.I.C., F.C.S. . . . . Net	3/6
<b>Commercial Commodities</b> By F. MATTHEWS, B.Sc., A.I.C., F.C.S. . . . . Net	12/6
<b>Commercial Contracts.</b> By E. J. PARRY . . . . . Net	5/-
<b>Commercial Self-Educator</b> Edited by R. W. HOLLAND, O.B.E., M.A., M.Sc., LL.D. Two Vols. . . . . Net	30/-
<b>Commodities of Commerce</b> By J. A. SLATER, B.A., LL.B. . . . . Net	6/-
<b>Cotton World, The</b> Compiled and Edited by J. A. TODD, M.A., B.L. . . . . Net	5/-
<b>Dictionary of the World's Commercial Products</b> By J. A. SLATER, B.A., LL.B. (Lond.) . . . . . Net	3/6
<b>Discount, Commission, and Brokerage Tables</b> By ERNEST HEAVINGHAM . . . . . Net	1/6

## Reference Books—contd.

	PRICE
<b>Empire Consols.</b> By J. F. DARLING, C.B.E. . . . .	Net 1/-
<b>Financial Statements, Analysis of</b> By H. G. GUTHMANN, M.B.A., C.P.A. . . . .	Net 21/-
<b>Fruit and the Fruit Trade</b> By F. FAIRFORD . . . . .	Net 6/-
<b>Guide to the Improvement of the Memory</b> By the late REV. J. H. BACON . . . . .	Net 1/8
<b>Handbook on Wills, A.</b> By A. H. COSWAY . . . . .	Net 2/6
<b>How to Collect Accounts by Letter</b> By C. HANNEFORD-SMITH . . . . .	Net 3/6
<b>How to Grant Credit</b> By CUTTIBERT GREIG . . . . .	Net 3/6
<b>History, Law, and Practice of the Stock Exchange, The.</b> By A. P. POLEY, B.A. . . . .	Net 7/6
<b>Investment Principles and Practices</b> By R. E. BADGER, Ph.D. . . . .	Net 21/-
<b>Investor's Manual, The</b> By W. W. WALL, F.S.S., F.J.I. . . . .	Net 3/6
<b>Mercantile Terms and Abbreviations</b> . . . . .	Net 1/6
<b>Money and the Stock and Share Markets, The</b> By EMIL DAVIES . . . . .	Net 2/-
<b>Money Making in Stocks and Shares</b> By SYDNEY A. MOSELEY . . . . .	Net 7/6
<b>Public Speaking.</b> By F. H. KIRKPATRICK . . . . .	Net 5/-
<b>Public Speaking, Essentials of</b> By W. C. DUBOIS, A.M., LL.B. . . . .	Net 8/6
<b>Romance of World Trade, The</b> By A. P. DENNIS, Ph.D., LL.D. . . . .	Net 15/-
<b>Shareholder's Manual, The</b> By H. H. BASSETT . . . . .	Net 3/6
<b>Speak in Public, How to</b> By C. F. CARR and F. E. STEVENS . . . . .	Net 3/6
<b>Statistics and Their Application to Commerce</b> By A. L. BODDINGTON . . . . .	Net 12/6
<b>Types of Business Enterprise</b> By M. C. CROSS, LL.B., Ph.D. . . . .	Net 21/-



## FOREIGN LANGUAGES

### FRENCH

	PRICE
<b>Progressive French Grammar</b>	
By DR. F. A. HEDGCOCK, M.A., D.ès.L. . . . .	Net 5/6
<b>Commercial French Grammar</b>	
By F. W. M. DRAPER, M.A., B. ès. L. . . . .	Net 2/6
<b>French-English and English-French Commercial Dictionary</b>	
By F. W. SMITH . . . . .	Net 7/6
<b>Manual of French Commercial Correspondence</b>	
By G. W. MACDONALD . . . . .	Net 5/-
<b>Correct French Speech</b>	
By B. DUMVILLE, M.A., F.C.P. . . . .	1/6

### GERMAN

<b>A New German Grammar</b>	
By J. KEEGAN, M.A. . . . .	Net 5/-
<b>Commercial German Grammar</b>	
By J. BITHELL, M.A. . . . .	Net 3/6
<b>A New German-English and English-German Dictionary for General Use</b>	
By F. C. HEBERT and L. HIRSCH . . . . .	Net 15/-
<b>German-English and English-German Commercial Dictionary</b>	
By J. BITHELL, M.A. . . . .	Net 16/-
<b>Commercial Correspondence in German.</b>	Net 3/6

### SPANISH

<b>Spanish Commercial Grammar</b>	
By C. A. TOLEDANO . . . . .	Net 4/6
<b>Spanish-English and English-Spanish Commercial Dictionary</b>	
By G. R. MACDONALD . . . . .	Net 12/6
<b>Manual of Spanish Commercial Correspondence</b>	
By G. R. MACDONALD . . . . .	Net 4/6

## Foreign Languages—contd.

### ITALIAN

<b>Baretti's Italian and English Dictionary</b>	PRICE
Compiled by GUGLIELMO COMELATI and J. DAVENPORT. In two volumes (Reprinted) . . . . .	Net 25/-
<b>Italian Commercial Grammar</b>	
By LUIGI RICCI . . . . .	Net 4/-
<b>Italian-English and English-Italian Commercial Dictionary</b>	
By G. R. MACDONALD. . . . .	Net 30/-
<b>Mercantile Correspondence, English-Italian</b>	
	Net 5/-

### PORTUGUESE

<b>Portuguese-English and English-Portuguese Commercial Dictionary</b>	
By F. W. SMITH . . . . .	Net 16/-
<b>Practical Portuguese Grammar</b> . . . . .	Net 7/6
<b>Mercantile Correspondence, English-Portu- guese.</b> . . . . .	Net 3/6

### PITMAN'S SHORTHAND

For Complete List of Textbooks, Phrase Books,  
Dictation Books, Reading Books, etc., see Pitman's  
"SHORTHAND AND TYPEWRITING CATALOGUE."

<b>Pitman's Shorthand Instructor</b> . . . . .	4/6
<b>Pitman's Shorthand Commercial Course</b> . . . . .	4/6
<b>Pitman's Shorthand Rapid Course</b> . . . . .	4/6
<b>Shorter Course in Pitman's Shorthand</b> . . . . .	1/-
<b>English and Shorthand Dictionary</b> . . . . .	10/-
<b>Shorthand Clerk's Guide</b>	
By V. E. COLLINGE, A.C.I.S. . . . .	2/6
<b>Progressive Dictator</b> . . . . .	2/6
<b>Phonographic Phrase Book</b> . . . . .	Paper 1/6, Cloth 2/-

## TYPEWRITING

	PRICE
<b>Pitman's Commercial Typewriting</b>	
By W. and E. WALMSLEY . . . . .	5/-
<b>Pitman's Typewriter Manual</b> . . . . .	6/-
<b>Business Typewriting</b>	
By F. HEELIS, F.C.I.S. . . . .	2/-
<b>Advanced Typewriting</b>	
By the same Author . . . . .	3/6
<b>Typist's Companion, The</b>	
By MAXWELL CROOKS, F.Inc.T.T., F.I.P.S. . Net	2/-
<b>Touch Typewriting for Teachers</b>	
By MAXWELL CROOKS, F.Inc.T.T., F.I.P.S., F.C.T.S. (Inc.) . . . . . Net	7/6
<b>Touch Typewriting Made Easy</b>	
By G. B. WRIGHT . . . . .	2/6
<b>Practical Course in Touch Typewriting</b>	
By C. E. SMITH . . . . .	2/-
<b>Dictionary of Typewriting</b>	
By H. ETHERIDGE . . . . . Net	7/6
<b>Questions and Answers on Typewriting and Office Procedure</b>	
By ARTHUR E. MORTON . . . . .	7/6
<b>Royal Society of Arts Typewriting Tests</b>	
By A. E. MORTON. No. 1, Elementary; No. 2, Inter- mediate; No. 3, Advanced. Each . . . . .	2/6
<b>Mechanical Devices of the Typewriter</b>	
By R. T. NICHOLSON, M.A. . . . . Net	6/-
<b>Modern Typewriting and Manual of Office Procedure</b>	
By A. E. MORTON . . . . .	5/6
<b>Work and Management of a Copying Office, The</b>	
By G. C. MENZIES . . . . . Net	10/6
<b>Pitman's Gramophone Method of Rhythmic Typewriting</b>	
Comprises a complete set of specially arranged gramophone records for use in the Touch Type- writing Class and a series of carefully graded keyboard exercises . . . . . Net	35/-
Exercises only . . . . . Each	1/6

*Complete List post free on application.*

# COMMON COMMODITIES AND INDUSTRIES

Each book in crown 8vo, illustrated. 3s. net.

In each of the handbooks in this series a particular product or industry is treated by an expert writer and practical man of business. Beginning with the life history of the plant, or other natural product, he follows its development until it becomes a commercial commodity, and so on through the various phases of its sale in the market and its purchase by the consumer.

- |   |  |
|---|--|
| <b>Acids, Alkalis, and Salts.</b> (ADLAM)                           | <b>Cotton Spinning.</b> (WADE)                     |
| <b>Alcohol in Commerce and Industry.</b> (SIMMONDS)                 | <b>Cycle Industry, The.</b> (GREW)                 |
| <b>Aluminium.</b> (MORTIMER)  | <b>Drugs in Commerce.</b> (HUMPHREY)               |
| <b>Anthracite.</b> (SUMMERS)  | <b>Dyes.</b> (HALL)                                |
| <b>Asbestos.</b> (SUMMERS)  | <b>Electric Lamp Industry, The.</b> (PERCIVAL)     |
| <b>Bookbinding Craft and Industry.</b> (HARRISON)                   | <b>Electricity.</b> (NEALE)                        |
| <b>Books—From the MS. to the Book-seller.</b> (YOUNG)               | <b>Engraving.</b> (LASOUILLES)                     |
| <b>Boot and Shoe Industry, The.</b> (HARDING)                       | <b>Explosives, Modern.</b> (LEVY)                  |
| <b>Bread and Bread Baking.</b> (STEWART)                            | <b>Fertilizers.</b> (CAVE)                         |
| <b>Brushmaker, The.</b> (KIDDIER)                                   | <b>Film Industry, The.</b> (BOUGHEY)               |
| <b>Butter and Cheese.</b> (TISDALE and JONES)                       | <b>Fishing Industry, The.</b> (GIBBS)              |
| <b>Button Industry, The.</b> (JONES)                                | <b>Furniture.</b> (BINSTEAD)                       |
| <b>Carpets.</b> (BRINTON)   | <b>Furs and the Fur Trade.</b> (SACHS)             |
| <b>Clays and Clay Products.</b> (SFARIE)                            | <b>Gas and Gas Making.</b> (WEBBER)                |
| <b>Clocks and Watches.</b> (OVERTON)                                | <b>Glass and Glass Making.</b> (MARSON)            |
| <b>Clothing Industry, The.</b> (POOLF)                              | <b>Gloves and the Glove Trade.</b> (ELLIS)         |
| <b>Cloths and the Cloth Trade.</b> (HUNTER)                         | <b>Gold.</b> (WHITLEY)                             |
| <b>Coal.</b> (WILSON)   | <b>Gums and Resins.</b> (PARRY)                    |
| <b>Coal Tar.</b> (WARNES)   | <b>Incandescent Lighting.</b> (LEVY)               |
| <b>Coffee—From Grower to Consumer.</b> (KEABLE)                     | <b>Ink.</b> (MITCHELL)                             |
| <b>Cold Storage and Ice Making</b> (SPRINGETT)                      | <b>Internal Combustion Engines.</b> (OKILL)        |
| <b>Concrete and Reinforced Concrete</b> (TWELVETREES)               | <b>Iron and Steel.</b> (HOOD)                      |
| <b>Copper—From the Ore to the Metal.</b> (PICARD)                   | <b>Ironfounding.</b> (WHITELEY)                    |
| <b>Cordage and Cordage Hemp and Fibres.</b> (WOODHOUSE and KILGOUR) | <b>Jute Industry, The.</b> (WOODHOUSE and KILGOUR) |
| <b>Corn Trade, The British</b> (BARKER)                             | <b>Knitted Fabrics.</b> (CHAMBERLAIN and QUILLER)  |
| <b>Cotton.</b> (PEAKE)  | <b>Lead, including Lead Pigments.</b> (SMYTHE)     |
|   | <b>Leather.</b> (ADCOCK)                           |
|   | <b>Linen.</b> (MOORE)                              |
|   | <b>Locks and Lock Making.</b> (BUTTER)             |
|   | <b>Match Industry, The.</b> (DIXON)                |

## Common Commodities and Industries—contd.

- |   |   |
|---|---|
| <b>Meat Industry, The.</b> (WOOD)                                       | <b>Starch and Starch Products.</b> (AUDEN)          |
| <b>Motor Boats.</b> (STRICKLAND)  | <b>Stones and Quarries.</b> (HOWE)                  |
| <b>Motor Industry, The.</b> (WYATT)                                     | <b>Straw Hats.</b> (INWARDS)                        |
| <b>Nickel.</b> (WHITE)  | <b>Sugar.</b> (MARTINEAU) (Revised by EASTICK)      |
| <b>Oil Power.</b> (NORTH)   | <b>Sulphur and Allied Products.</b> (AUDEN)         |
| <b>Oils.</b> (MITCHELL)   | <b>Talking Machines.</b> (MITCHELL)                 |
| <b>Paints and Varnishes</b> (JENNINGS)                                  | <b>Tea.</b> (IBBETSON)                              |
| <b>Paper.</b> (MADDOX)  | <b>Telegraphy, Telephony, and Wireless.</b> (POOLE) |
| <b>Patent, Smokeless, and Semi-Smokeless Fuels.</b> (GREENE and PERKIN) | <b>Textile Bleaching.</b> (STEVEN)                  |
| <b>Perfumery, The Raw Materials of</b> (PARRY)                          | <b>Timber.</b> (BULLOCK)                            |
| <b>Photography.</b> (GAMBLE)  | <b>Tin and the Tin Industry.</b> (MUNDEY)           |
| <b>Platinum Metals, The.</b> (SMITH)                                    | <b>Tobacco.</b> (TANNER) (Revised by DREW)          |
| <b>Player Piano, The.</b> (WILSON)                                      | <b>Velvet and the Corduroy Industry</b> (COOKE)     |
| <b>Pottery.</b> (NOKE and PLANT)  | <b>Wall Paper.</b> (WARD)                           |
| <b>Rice.</b> (DOUGLAS)  | <b>Weaving.</b> (CRANKSHAW)                         |
| <b>Rubber.</b> (STEVENS and STEVENS)                                    | <b>Wheat and Its Products.</b> (MILLAR)             |
| <b>Salt.</b> (CALVERT)  | <b>Wine and the Wine Trade.</b> (SIMON)             |
| <b>Shipbuilding and the Shipbuilding Industry.</b> (MITCHELL)           | <b>Wool.</b> (HUNTER)                               |
| <b>Silk.</b> (HOOVER)   | <b>Worsted Industry, The</b> (DUMVILLE and KERSHAW) |
| <b>Silver.</b> (WHITE)  | <b>Zinc and Its Alloys.</b> (LONES)                 |
| <b>Soap.</b> (SIMMONS)  |   |
| <b>Sponges.</b> (CRESSWELL)   |   |

## Technical Dictionary of Engineering and Industrial Science in Seven Languages: English, French, Spanish, Italian, Portuguese, Russian, and German.

In four volumes, each in crown 4to, buckram gilt, 2230 pp. £8 8s. net, complete.

Compiled by ERNEST SLATER, M.I.E.E., M.I.Mech.E., in collaboration with leading Authorities.

## PITMAN'S SHORTHAND

Invaluable to all Business and Professional Men

Sir Isaac Pitman & Sons, Ltd., Parker Street, Kingsway, London, W.C.2





